



# 1 Alpine Space Expert Workshop

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**COPING WITH CLIMATE CHANGE**  
Transnational Action in the Alps

INTERLAKEN Switzerland 4-5 May 2010

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EUROPEAN TERRITORIAL COOPERATION





### **Pooling resources: Three thematic workshops for the Alpine Space**

“Coping with climate change” is the first of a series of three thematic workshops which the Alpine Space Programme is organising in 2010/2011. Beyond its large pool of partners, the EU transnational cooperation programme for the Alpine region brought together 100 key players, scientific experts and practitioners along with policy-makers to take a close look at this major challenge affecting the cooperation area.

This report presents the highlights and key messages of the intense discussions at the workshop in Interlaken. It points out critical aspects for priority themes, takes stock of prevailing approaches and adjusts the focus towards well-directed action to effectively mitigate and adapt to the impact of climate change. Future projects are provided with a menu of ingredients for the implementation of joint activities and the development of concerted policy options for the Alps.



## 3 questions to **Christian Salletmaier**

Managing Authority of the Alpine Space Programme (ASP)

### 1

You have launched this series of workshops on cross-cutting "big" issues. Why?

We are halfway through the current programming period 2007-2013. Project work is in progress, initial results are in the pipeline, 61 million euros have been committed to projects. So it is time to take a look at the big picture! I very much favour a pro-active approach and the ASP as a means of stimulating sustainable development. In these workshops we not only wish to review what has been achieved but also identify future challenges and enrich the policy debate in the Alpine Space.

### 2

Why climate change?

Well, here in the Alps, climate change is being felt earlier and more sharply than elsewhere on this continent. Just think of water: 40% of Europe's fresh water originates there, supplying tens of millions of Europeans in lowland areas. Or think of ecosystems, transport, tourism, settlements ... An issue of such wide scope needs a common understanding of what the specific challenges are for the Alpine region. Moreover, climate change is already being addressed by several ASP projects and other initiatives. We need to pool existing knowledge for these highly demanding questions and involve business, ecology and society in the development of answers.

### 3

What is coming up next?

The common target is to support mitigation and especially adaptation measures. To guide the way, workshop participants clearly identified gaps and suggested improvements. From September 2010 our third call for project proposals will be open for expression of interest and we hope this paper will serve as inspiration and orientation for new initiatives and partnerships. The next "big topic" on which we will start a broader debate is that of demographic change, which will be in February 2011. Again, we wish to make sure that we ask the right questions.

# CRITICAL ASPECTS

“Start working in practice”, was probably the strongest message to take home from the UN Climate Change Summit in Copenhagen. It confirms the audible call for concerted action in this complex field as policy frameworks such as the EU Strategy on climate change are being laid down. Many nations and regions have surged ahead with their adaptation strategies and there is more in the pipeline. But even with many projects on the way, new objectives set, strategies discussed and plans adopted there is still a need for more concerted action. Since its initiation in the year 2000 the Alpine Space Programme has provided both a framework and funds for supporting transnational action across the Alpine arch. What makes adaptation (and mitigation) so complex can be summarised in six points.

## Assessing vulnerability

Forest resources, biodiversity and water - Europe's assets in the Alpine area are under pressure: both natural and human systems in this region are highly vulnerable to climate change. According to the OECD, climate change hits the Alps three times harder than the world average. Major changes are noticeable, above all in the hydrological cycle: changing precipitation patterns, decreases in snow and glacier cover, reduction of permafrost. The threat of more droughts in summer, severe landslides and floods in winter was emphasised. Together with the increasing demand for water, sectors such as agriculture, energy, winter tourism, forestry, but also the population itself are subject to increased pressure. The latest report of the European Environmental Agency (EEA) on water resources in the Alps has shown how climate change will affect Europe's “water tower”, for example. For the experts a huge gap between knowledge and adaptation necessity has also become evident. The Alpine region is expected to become even more vulnerable. Subsequently, achieving a better and deeper understanding at every level is crucial to being able to find out why and how to adapt.

## Coping with complexity

Pinpointing the problem of cargo traffic flow in the Alps illustrates how complex adaptation is and what a wide range of actors needs to be involved: in Alpine valleys, air pollution is three times as high as on plains; at night it might even be six times as high. Traffic causes enormous CO<sub>2</sub> emissions, air and noise pollution and affects the quality of life. A modal shift from road to rail is one of the targets. However, transport axes are basically structured by the main sea ports of Europe. Traffic fluxes concentrate on the key freight corridors, linked with Alpine crossings near the passes of Fréjus, Mont-Blanc, Saint-Gotthard and the Brenner. Moreover, aspects of transport organisation such as toll levels differ from route to route and rail capacities are too limited. So to reduce the transalpine traffic flow, the entire system of economic trade has to be re-organised and policies need to be coordinated at a pan-Alpine and even European level.

## Managing uncertainty

Thanks to a tradition of nature conservation, Alpine regions host almost 1,000 protected areas of over 100 hectares. Little is known, however, about the adaptation capacities of flora and fauna or species “invading” Alpine eco-systems. Many scenarios and huge amounts of data and parameters

## Setting the Scene

Interlaken is an impressive setting for an international workshop on climate change: it lies between Lakes Thun and Brienz at the foot of the Jungfrau Massif. In 2005 the river Aare, connecting the two lakes, flooded this tourist resort. Adapting to weather extremes is already on the agenda here.

With the aim of setting a common framework for the workshop discussions, experts provided brief insights into critical aspects and scenarios of climate change, complemented by the experience of actors in Alpine regions. Here is an overview of their discussions.

are on the table but are lacking in certainty and transparency, in biodiversity as well as in other sectors: Increasing vulnerability and uncertainty particularly strikes traffic and risk management, for instance when it comes to protecting transport infrastructure. The call for transparent risk control and a holistic approach to risk governance is growing in Alpine regions.

Under the general label of climate protection, many measures are already being implemented. First initiatives such as CIPRA's cc.alps have attempted to critically evaluate such measures in terms of their environmental, social and economic impacts.

## Re-thinking systems

Whether in economy, mobility, tourism or energy management – both thinking out-of-the-box and acting in new ways are necessary in the Alpine region. Creating new systems should also entail the abandonment of bad practices: in winter tourism it is high-time completely new products were developed instead of defending the status quo. Furthermore, every investment made should be assessed in advance for its impact on climate change. For the energy sector, the EU strategy has set ambitious objectives to be reached by 2020. It aims to increase energy saving and efficiency as well as boost the share of renewable energies and bio-fuels. Mini-hydros, geothermal energy and wind or solar power, all managed by smart grids, provide a regional response in the Alps. In inner-Alpine transport as in other sectors, sufficiency – doing only what is necessary, effectiveness – doing the right thing, and efficiency – doing it the right way, is the trio to aim for.

## Managing conflicts

Whenever striving for more sustainable systems and processes, markets and products or behaviour change, partners have to take conflicts into account. How are rivaling needs to be managed: producing biomass, growing crops or developing landscapes? Mediation is called for in order to harmonize such trade-offs in the regions. Fortunately, some win-win solutions are already working, for instance projects combining renewable energies, tourism and transport. Making the Alpine region a model for climate change capability is a challenging vision.

## Raising awareness

Climate change is frequently reduced to an environmental issue. What makes the population feel concerned? How is it possible to get local actors on board – above all in economic sectors? Offering reliable and comparable data on the regional impact of climate change can be one method of “touching” people. Furthermore, translating abstract and complex information into local needs and benefits is essential to campaign work. In every sector, considering individual perceptions and promoting sustainable alternatives can encourage stakeholders to change their habits. Whether new energy distribution systems, ecological corridors and new forms of land use, geothermal power or smart mobility networks, they all need to be accepted by people living in the Alps.

# CORE ISSUES

## Defining agendas: priorities for cooperation

With a cross-cutting perspective, the expert workshop in Interlaken has taken a look at seven themes that are instrumental to the development of the Alpine region. All of them are addressed by projects under the cooperation programme and beyond. However, the progressively increasing effects of climate change, as also projected for the Alps, necessitate an active exchange between all ongoing initiatives. Against this background experts were invited to:

- find a common understanding of key challenges caused by climate change in the Alpine region
- analyse the state of achievements in tackling those through current projects
- identify gaps and scope for improvement to support mitigation and adaptation measures
- build synergies between existing initiatives
- in short: provide input to the ongoing policy debate

It is in the nature of such an exercise and in the diversity of the participants that the results are not harmonised but reflect a status quo of ongoing debate. Nevertheless they provide a sound starting point for the development of new projects.

## Economy



For the economy as for the other themes under discussion, one thing is certain about the impact of projected climate change: uncertainty will increase. The Alpine economy is diverse - encompassing energy production and tourism, agriculture and industry, crafts and services. It rarely speaks with one voice. Sectors, markets and interests often differ considerably. The same diversity applies to entrepreneurs' approaches to climate change. However, a common challenge for actors in all sectors from Ljubljana to Lyon emerges: seeing climate change as a chance for **new business opportunities**.

Most obvious with the insurance companies, an economic cost has been attached to climate change and a number of studies and strategies present the possible consequences of climate change for various sectors. There is however a need for **substantiated knowledge regarding the ability of climate change to affect whole regional economies**. Combining this with improved climate models could provide important and reliable information for the development of regional adaptation strategies.

Taking economic actors on board is crucial to sustaining regional competitiveness and especially in

times of climate change. Private or public companies often ensure that strategies and concepts are being developed closely to business needs and tested in practice. In the Alpine region, there is an **obvious need for more cooperation and dialogue between economic and environmental stakeholders**.

While the "green economy" has become a popular new development model, and green innovations are considered beneficial for a company to improve its market share and reduce economic efforts associated with environmental management – initiatives often remain isolated. It is all the more important to **spread awareness among business of the consequences of climate change**, of the need to mitigate and adapt - at both the local and regional level, and **to find policy measures to support regional economies in times of uncertainty and change**. After all, new models using economic indicators different from GDP, such as quality of life, could best be promoted and tested on a small scale regional level.

## Tourism

As a key sector in the Alpine region, tourism has to cope with a discrepancy: on the one hand, stunning natural settings are a vulnerable asset of Alpine tourism; on the other hand, tourist activities can harm nature and contribute to climate change. In particular, development of infrastructure and the use of water often cause conflicts, especially in winter, when artificial snow production consumes large amounts of energy and water. **Effective conflict management models** that balance the concerns of the environmental and of tourism pose a major challenge.

However, the experts in Interlaken surprisingly regarded climate change not merely as a menace, but also as an **opportunity for tourism**. For instance, higher average temperatures could attract more tourists to cooler resorts up in the mountains in summer. Together with other aspects of the business environment, such as the financial crisis or travellers' tendency to take short trips, Alpine tourism could even benefit from climate change. Seizing these opportunities would need a change in a number of policy areas: from spatial planning to agriculture, from water management to energy planning - to name just a few.

In spite of the predicted extensiveness of climatic change, there is an imbalance in how the impact of climate change on summer and on winter tourism is addressed. The impact on winter tourism in the Alps prevails in discussion - most notably the question as to how the lack of snow will affect ski resorts.

In order to re-invent or diversify tourism, more emphasis needs to be put on summer and four-seasons offers. Future initiatives will need to reflect the **impact on tourism throughout the year**, beyond changing landscapes or drier and hotter summers. For example, what are the alternatives for summer destinations in Alpine regions to cope with periods of water scarcity?

Future tourism models should actively consider climate change. Regional, national and local actors have to think out-of-the-box, consider economic needs, for instance those of cable car companies, and simultaneously appeal to their sense of social responsibility. First projects within the Alpine Space Programme are expected to give some promising pan-Alpine answers to the tourism sector. Transferring these new concepts across various stakeholders, developing **more sustainable business strategies, while harmonizing policies and marketing to be competitive at the global level** are the ingredients for decision makers to "re-invent tourism in the Alps".

Alpine Space projects addressing climate change and economy:

- AlpEnergy

- AlpHouse

- ENERBUILD

- SHARE



Alpine Space project addressing tourism:

- ClimAlpTour

In addition, tourism destinations in the Alps should keep an eye on the **acceptance of new adaptation measures**. Consequently, regular surveys of public opinion among guests and the local population have been suggested.

## Transport



Alpine Space projects addressing transport:

- ACCESS
- Alp Check 2
- iMONITRAF!
- Co2NeuTraip
- PARAmount
- TRANSITECTS

As a transit area in a sensitive environment, three fields of action have been identified as crucial to “re-thinking transport” in the Alps on a long-term basis: trans-alpine freight transport, trans-alpine passenger traffic and inter-Alpine traffic. As for rail transport crossing the Alps, the specialists underline **links to European networks** as a major challenge as well as the **inclusion of all external costs into road-pricing**. Although freight transport offers an even wider scope of action, the workshop participants focused mainly on passenger transport.

People living in Alpine countries lead urban lifestyles. Almost 95% live in areas below an altitude of 1,000 metres (EEA 1999) and 60% in urban or suburban agglomerations. Huge disparities between rural and urban areas are obvious. The traffic problem affects everyone, either as commuter, city dweller or consumer of goods. At least two thirds of the inner-Alpine traffic is known to be locally generated, caused by the inhabitants themselves and the regional economy. The formula for more sustainable transport by **reducing traffic needs and encouraging modal shift** applies here too. In this context, low fuel prices are considered to be counter-productive. There is still a need **for improved infrastructure systems** in order to support public transport users, pedestrians and cyclists.

One of the biggest **challenges is bridging the gap between new technical solutions and behavioural change**. Many innovative transport products and services have been developed, but for various reasons such as perceived flexibility and comfort, these often lack acceptance both by the transport sector and the general public. To effectively introduce new sustainable and cost-attractive offers together with “soft” measures are needed, such as incentives for behavioural change or information on alternatives. To implement groundbreaking transport systems, future initiatives will have to involve all stakeholders: decision and policy makers in administration and business, planners, commuters, tourists and consumers.

In view of special constraints as regards accessibility to transport and knowledge infrastructures due to the Alp’s geographical features, action also needs to focus on **new approaches to working hours and tele-working models**, in order to reduce local traffic and reduce traffic peaks.

Spatial planners face the challenge of linking living and working places, whereas traffic managers should focus on **flexible means of transport between urban and rural areas**.



## Energy

Reducing energy consumption, promoting its efficiency and boosting the share of renewable sources are widely accepted targets, for the Alpine region too. To achieve these targets is a particular challenge in the Alps, due to the vulnerability and topographical particularities of this region. Primarily, a better integration between policies and local activities in regional and national strategies is called for. In addition, new approaches that **integrate energy saving and the use of renewable energies** have to be encouraged. Several pilot projects have been testing models for approaches fitted to the Alpine region.

In trying to support renewable energies or increase their share in the energy mix, stakeholders often face conflicts with other forms of land use. Production of woody biomass for energy, for example, can cause overuse of forests; areas for photovoltaic systems compete with croplands and wind energy can affect landscape attractiveness. However, **sensitive conflict management** is needed not only in these competing sectors, but also between the rising number of renewable energy producers.

Moreover, the production of “renewables” is not a cure-all solution. A **thorough assessment of potential negative effects** on the environment must be carried out. Currently, renewable energy producers, environmental NGOs, and the general public often disagree on the ways and means to use these new energy sources. A **sound basis of knowledge on all impacts of renewable energy production** – positive as well as negative – is a first step towards an objective discussion. Decision-making can then be based on commonly developed and widely shared criteria, guidelines, strategies and targets.

Furthermore, successful energy saving models and management know-how need to be mainstreamed. **Putting them into practice** means involving consumers, energy providers, investors and policy-makers.



Alpine Space projects related to Energy:

● AlpEnergy

● AlpHouse

● CO2NeuTrAlp

● ENERBUILD

● SHARE

## Water

The role of the Alps as the European “water tower” is expected to become even more predominant than it already is. With an expected increase in water consumption on the one hand, with floods and droughts severely impacting the supply side on the other hand, integrated policies and their coordinated application are called for. After all, the expected rise in temperature and subsequent water shortages will have severe impacts on human wellbeing and water reliant economic sectors. **Effective management of river basins across national boundaries** is therefore required to manage this vital resource. Questions need to be answered such as how much water is allocated to which purposes and how upstream and downstream solidarity might be enhanced.

A number of knock-on effects arise: alterations in climatic processes will not just affect the amount of water supplied to millions of Europeans. Temperature rise both in surface and ground water can also harm its quality. Waste water treatment plants can trigger a vicious circle when treated water is fed back into rivers at a low water level. In addition, the thawing of permafrost has been shown to introduce heavy metals into melting water. Thus beyond the requirements of the European Water Framework Directive, **keeping water quality at a high standard is a key objective for this region.**



Alpine Space projects dealing with water management:

- AdaptAlp
- AlpWaterScarce
- PermaNET
- SHARE
- SILMAS

Relevant facts are provided by the EEA Report (2009) “Regional climate change and adaptation — The Alps facing the challenge of changing water resources”.

In addition, water management has to comply with many different rules and regulations as well as with diverse structures in ownership and pricing. Some regions have traditional water rights dating back a very long time or long lasting concessions. Consequently, there is a need for studies and strategies to **harmonize water management** including legal frameworks.

Ground water is the resource for approximately 90% of our drinking water. Its recharge is pivotal but historic factors and financial restrictions provide obstacles to observing networks, which leads to a **lack of reliable monitoring** in some regions.

Stakeholders in water management also have to handle uncertainties. Extreme events are hard to predict and cause considerable fluctuations in both water quality and quantity. However stakeholders lack contingency plans when the amount and quality of water vary significantly. New sensitivity studies could help to **manage these uncertainties**.

As the competing demands for water increase, local communities become key players in Alpine water management, in particular when it comes to **generating public awareness for this highly sensitive theme**. In future, communal decision-makers need effective strategies which communicate solutions to the problems when it comes to water-related aspects of spatial planning.

## Natural hazards



Alpine Space projects related to risk management:

- AdaptAlp
- ALPFFIRS
- CLISP
- MANFRED
- PARAmount
- PermaNET

In times of climate change there is a particular need for efficient analysis, assessment and communication of natural hazards.

Changed precipitation patterns, floods, land slides, debris flow, avalanches, multi-hazard situations or road conditions – on all these issues, Alpine regions require reliable data, including metadata. However, considering the high quantity of already existing information, more emphasis should be placed on **filling existing data gaps**. Moreover, data needs to be comparable across the whole Alpine arch, available beyond project or programme cycles and easily accessible. In addition to technical features for sustainable monitoring, business models to obtain data sets which are not freely accessible have been called for.

Furthermore, specific tools are to be developed for stakeholders facing and managing risks: how can multi-hazard situations, for example, be assessed, documented and integrated into appropriate early warning systems? The uncertain nature of risks represents a challenge to assessing threats, vulnerability and consequences of risks and subsequent warnings. A need for **tools that help managing incertitude** has become obvious.

In addition, new **models for risk governance** and an exchange of good practice in this field are required. These models should not only take conflicting interests into account. They should also facilitate collaborative decision making and offer a toolbox (for monitoring and managing risks) that works in every Alpine country. A participatory, multi-level approach to risk governance is a key challenge.

Stakeholder networks involving those who decide and manage and those affected by natural hazards should be joining in the development of such tools so as to be able to produce effective results.

Finally, **communication of risks is to be improved**. Reducing complex issues to easily comprehensible information is a difficult task. Once an assessment, warning or recommendation is available, how can it reach decision-makers, crisis managers, first responders or the public in an effective manner? Differentiated communication strategies and measures for each audience are needed.

## Biodiversity

The Alpine region's rich biodiversity is very vulnerable to climate change. As an important element of dynamic landscape evolution/development, integration becomes a prerogative **in any Alpine initiative dealing with landscape or resource management**.

Stakeholders can draw on substantial research results generated in European programmes such as FP6 and FP7 projects relating to monitoring, mapping and modelling which the Alpine Space Programme and other European Territorial Cooperation programmes also encourage. Moreover, ecological networks have been successfully set up, from European to regional level and nature protection projects were facilitated by the LIFE programme. All of this provides a sound basis for moving forward on the biodiversity agenda: **from concepts and strategies to joint implementation**.

Reinforced by scientific evidence, the **social, economic and cultural benefits of biodiversity need to be communicated even more clearly**, to show policy-makers and the general public, how it provides and ensures **ecosystem goods and services** and why it should be protected.

As for forests, the European Environmental Agency will launch a report by November 2010. Well-intentioned adaptation and mitigation measures by other sectors, such as transport or energy, might harm eco-systems. So assessing **direct and indirect impacts and managing increasing conflicts between different stakeholders** will be an important future task.

Additionally, it is high time a "fitness check" was carried out on nature conservation measures (such as Natura 2000) in the context of climate change as well as an assessment of the role of biodiversity in the capacity for natural resources adaptation.

In order to succeed in making biodiversity a cross-cutting theme in the Alpine region, regional authorities, protected area managers and scientists should cooperate, preferably beyond the duration of any specific project or programme.



Current Alpine Space projects relating to biodiversity:

● Econnect

● MANFRED

● SHARE

● SILMAS

# MOVING AHEAD

Climate change impact on the Alps is not limited to few sectors or a few measurements. The Alpine Space Programme will take up the suggestions of the 100 experts convened in Interlaken. The following policy options and perspectives shall also serve as inspiration for future cooperation projects.

## Widening the focus

Upcoming initiatives should put more emphasis on the indirect impacts of climate change, on its long-term consequences as well as side effects. There is an obvious need to implement cost-effective measures for assessing these impacts, but these must be tailored to local and regional needs. Such measures should facilitate effective solutions and overcome the huge gap between knowledge and adaptation needs in Alpine regions.

## Harmonising action

The Alpine region needs a sound basis for joint action. In this respect, the sphere of activities ranges from cross-linking existing data bases to harmonising present mitigation and adaptation measures as well as developing and testing effective policies. In water management, for instance, new strategies are required to harmonise various legal instruments, administrative rules and structures. Future transnational approaches need to reflect existing results and experience more strongly and build on this foundation. Consequently they should identify and fill gaps in order to achieve common solutions.

## Cross-linking sectors

The challenges of climate change facing the Alpine region also call for sensitive conflict management. Competing interests - whether between risk and transport management or in other areas - often involve conflicts between different interest groups. Thus, cross-sector initiatives are needed more than ever, encouraging key players to move in the same direction. These approaches tend to have a high practical relevance, increase acceptance and open up new perspectives which go beyond the familiar. For sustainable expansion of renewable energy production, providers and distributors should also involve environmental NGOs and civil society in their planning strategies. Another example is ecosystem services: a joint initiative would accentuate the human dimension of biodiversity and integrate completely different concerns, such as those of tourism, forestry, water and energy supply. Furthermore, such an approach illustrates what services the Alps provide for regions and urban agglomerations in and outside the cooperation area.

## Capitalisation

Promising project results for the mitigation and adaptation of climate change in the Alps are underway. It is high time to capitalise on all relevant studies and strategies as well as on obvious success factors and barriers to adaptation. Disseminating and transferring good practice and so called “no regrets” measures – that is, measures that turn out to be of benefit no matter how or if the predicted climate change impacts materialise - in a more effective way will encourage Alpine regions to broadly use this expertise. Particular emphasis should be put on capitalising on experience at the policy level in order to facilitate strategic decision-making. Subsequently, political recommendations for regulations and guidelines drawn from successful projects are to be brought together, identifying synergies or discrepancies. This would make the most of the lasting effects of project achievements and make a valuable contribution to a more coherent Alpine policy.

## Mobilising key players & reaching out to the people

The acceptance of planned and initiated measures by the inhabitants of the Alps is important for implementing measures at a local level. Successful communication often means taking key stakeholders and the people in the regions on board. Above all, there is a need to raise awareness of the impacts of climate change and implement made-to-measure communication strategies. In this respect, bottom-up or participatory approaches should be favoured. As for the economic sector, sensitising key partners to the effects of climate change on the regional economy is a crucial communication task. Here, economic needs could effectively be linked to risk prevention, water scarcity and other topics. The Alpine Space Programme aims to support framework conditions that enable economic stakeholders in the cooperation area to adapt their business to climate change impacts.

We shall continue to support protagonists committed to mitigating and adapting to climate change in the Alpine region. Finding, developing and testing adequate measures, strategies and policies is our common goal. Apart from the above perspectives, future projects should in particular take a proactive approach to climate change and a clear focus on impact and long-term effects.

# PROJECTS

## Alpine Space projects addressing climate change

### **ACCESS - Improving Accessibility of Services of General Interest –**

#### **Organisational Innovations in Rural Mountain Areas**

answers the need for action in the field of public transport and accessibility to services of general interest in sparsely populated mountain areas. It identifies new forms of organising those services using ICT and fosters demand-oriented, integrated mobility systems.

[www.access-alpinespace.eu](http://www.access-alpinespace.eu)

### **AdaptAlp - Adaptation to Climate Change in the Alpine Space**

harmonizes approaches and methods for better prognosis of climate change impacts in the Alpine area. It provides recommendations to policy-makers and local stakeholders for efficient adaptation strategies and disaster risk management.

[www.adaptalp.org](http://www.adaptalp.org)

### **Alpcheck2 - Alpine Mobility Check - Step 2**

delivers an innovative transport planning tool to support public decision makers with free online traffic and environmental data for the whole Alpine area.

[www.alpcheck2.eu](http://www.alpcheck2.eu)

### **AlpEnergy - Virtual Power Systems as an Instrument to Promote Transnational Cooperation and Sustainable Energy Supply in the Alpine Space**

works on standardizing both technologies and procedures to manage variation in renewable energy supply through virtual power systems.

[www.alpenergy.net](http://www.alpenergy.net)

### **ALPFFIRS - Alpine Forest Fire waRning System**

improves forest fire prevention in times of increased risk due to climate change. Alpine forests will benefit from a shared warning system and mutual aid in preparedness and suppression.

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

### **AlpHouse - Alpine building culture and ecology.**

enables local craft companies to renovate traditional buildings and settlements to meet highest standards of energy efficiency while preserving the regional characteristics of Alpine architecture

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

### **Alp-Water-Scarce - Water Management Strategies against Water Scarcity in the Alps**

develops integrated water management strategies and an early warning system to prevent the Alps from water scarcity.

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

### **ClimAlpTour - Climate Change and its Impact on Tourism in the Alpine Space**

provides Alpine tourism centres with the information and adaptation strategies to increase their potential in all seasons, even if snow-reliability is affected by climate change.

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

### **CLISP - Climate Change Adaptation by Spatial Planning in the Alpine Space**

contributes to climate change adaptation by providing climate-proof spatial planning solutions as a key to sustainable development.

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

**CO2-NeuTrAlp - CO2-Neutral Transport for the Alpine Space**

demonstrates that environmentally friendly mobility is feasible thanks to renewable energies. 13 pilot projects test the hypothesis and demonstrate how mobility can enter the solar age.

[www.co2neutralalp.net](http://www.co2neutralalp.net)

**Econnect - Improving Ecological Connectivity in the Alps**

helps species to adapt to the environmental transformations brought about by climate change. By connecting protected areas to one another, it allows migration and genetic flow across the entire Alpine range.

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

**ENERBUILD - ENERgy Efficiency and Renewable Energies in the BUILDing Sector**

strengthens small-to-medium building businesses as relevant economic actors in Alpine valleys and supports the shift to ecological buildings by providing craftsmen and architects with know-how, public builders with decision guidance and customers with innovative financing tools.

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

**IMONITRAF - Implementation of MONITRAF (common measures for transalpine traffic)**

tackles negative effects of freight and passenger transport. A joint monitoring system is paired with a political platform to harmonise transportation management tools and to claim Alpine specific regulations.

[www.imonitraf.org](http://www.imonitraf.org)

**MANFRED - Management strategies to adapt Alpine Space forests to climate change risks**

collects and shares knowledge of climate change impact on forest ecosystems, identifies regional and local action requirements and develops the necessary adaptive strategies. All with the aim to protect and preserve forest ecosystems through effective forests management.

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

**PARAMOUNT - imProved Accessibility: Reliability and security of Alpine transport infrastructure related to mountainous hazards in a changing climate**

applies expertise from natural hazards management to the transport sector in order to improve accessibility, reliability and security of Alpine infrastructure in a changing climate.

[www.paramount-project.eu](http://www.paramount-project.eu)

**PermaNET - Permafrost long-term monitoring network**

creates an Alpine-wide monitoring network and develops a common strategy to deal with permafrost related hazards.

[www.permanet-alpinespace.eu](http://www.permanet-alpinespace.eu)

**SHARE - Sustainable Hydropower in Alpine Rivers Ecosystems**

develops, tests and promotes a decision support system to enhance renewable energies generated from rivers while maintaining healthy river ecosystems.

[www.share-alpinerivers.eu](http://www.share-alpinerivers.eu)

**SILMAS - Sustainable Instruments for Lakes Management in the Alpine Space**

facilitates dialogue between Alpine lakes managers and researchers to analyse the effects of climate change on Alpine lakes, to resolve conflicts in usage, and to educate the public in sustainable development.

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

**Transitects - Transalpine transport Architects**

seeks to make rail more attractive and accessible for freight transport and the logistics market by offering competitive and sustainable alternatives to the road and to thereby mitigate the negative effects of traffic.

[www.transitects.org](http://www.transitects.org)

The **Alpine Space Programme** is the EU transnational cooperation programme for the Alps. Partners from the seven Alpine countries work together to promote regional development in a sustainable way. During the period 2007-2013, the programme is investing 130 Mio EUR in impact-oriented projects. These focus on competitiveness and attractiveness, accessibility and connectivity, environment and risk prevention.

# THANKS

in particular to all speakers

**Bruno Abegg**, *Scientific Expert cc.alps, CIPRA International*

**Anton Aschwanden**, *Workshop Facilitation*

**Patrick Biard**, *Rhonalpenenergy-Environment (F)*

**Lucia Brusegan**, *ClimAlpTour Project, Veneto Region (I)*

**Philippe Dhenein**, *Regional Planning, Rhône-Alpes Region (F)*

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