



SUSTAINABLE RURAL DEVELOPMENT AND INNOVATION

Report on the State of the Alps

**ALPINE CONVENTION
Alpine Signals - Special Edition 3**

SUMMARY

IMPRINT

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Graphic design and printing:

Karo Druck KG (Eppan/Appiano, BZ, Italy)

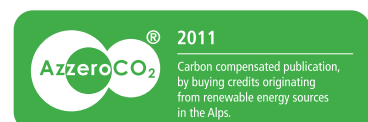
Translations: INTRALP

Cover Photo:

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ISBN: 978-88-97500-04-9

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SUMMARY

The present report has been approved by the XIth Alpine Conference, held in Brdo pri Kranju (Slovenia) 8th March 2011. The preparation of this report has been coordinated by the Permanent Secretariat of the Alpine Convention in coordination with the French Presidency of the Alpine Conference.

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GLOSSARY

Within the framework of the RSA3, the experts have agreed to the following definitions of terms:

- **Alpine mountain area** is defined as an area delimited by the Alpine Convention perimeter.
 - **Rural area** is defined as the complete area within a territory that is delimited by the Alpine Convention perimeter, excluding the main urban agglomerations with more than 125,000 inhabitants, such as Bolzano, Trento, Salzburg, Rosenheim, Innsbruck, Luzern, Annecy, Chambéry and Grenoble.
 - **Sustainable rural development** is generally recognized as the product of those human activities that use the resources of rural territories to increase welfare. Development can be considered as sustainable if it meets the needs of the present generation without compromising the ability of future generations to meet theirs.
Rural development is the key tool for encouraging diversification and innovation in rural areas. It aims to reverse depopulation processes, stimulate employment and equality of opportunities, respond to growing requests for better quality, health, safety, personal development and leisure, and finally improve the quality of life of Alpine populations.
 - **Innovation** is the successful production, assimilation and exploitation of novelty in the economic and social spheres.
In terms of rural development, territorial innovation must be considered and associated with the pillars of sustainable development, with the reorganization and sharing of territories, and with the actor and communication networks that lead to territorial competitiveness, attractiveness and sound economic development.
 - **Natural resources** are available in the natural environment but are scarce. Consequently, they can be considered as economic resources. Typically they include products that are naturally available and which can be sold on the market, such as coal, copper, crude oil, zinc, etc. Generally, a recognisable and variable price is assigned to these resources through a market mechanism based on demand and supply curves. Clean air, freshwater, forests, landscapes, heat from the sun, the climate, etc., are often considered environmental resources. Typically, these resources are not traded on the markets and their value is underestimated by citizens and decision makers.
 - **Human assets** are generally considered to indirectly produce economic value. They have been developed over time and can be seen as representing the heritage of a given territory. Even though heritage is usually formed of material goods, the value of these assets largely depends on human intervention, culture and perceptions.
 - **Renewable energy resources** base on non-fossil energy sources (wind, solar, geothermal, wave and tidal energies, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases) (According to the EU Directive 2001/77/EC[22]) and are constantly renewed through natural processes. This renewal occurs at a specific rate allowing the stock of resources to be conserved over time. This implies that renewable energy sources will not be exhausted in the foreseeable future.
-

FOREWORD

With this report the Alpine Convention wishes to draw attention to the development potential which may be offered by the Alps, both for inhabitants in this territory and for the entire Europe region. Not only the natural resources, but its people are one of the most important sources for development in the Alps. With their creative and innovative approach, they adapted to the characteristics of the Alpine territory, know how to use advantages and create new opportunities and at the same time also ensure that the Alps will not become confined but will stay in dynamic relation to its broader hinterland.

It is our wish to create a recognizable brand for the Alps, which is at present known for winter tourism, but which should represent and reflect a sustainable development and a quality of life in the mountain area throughout the year.

The Report on the State of the Alps brings forward answers on how to overcome the problems detected and take better advantage of the development potential of the Alpine arc in connection with its natural hinterland. Proposals are given with regard to what should be done and it is our hope that these will find their way into the political arena.

Blanka Bartol
Slovenian Presidency of the Alpine Convention

The Alps are not just beautiful natural areas but a complex reality where 14 million people live: two third of the alpine population lives in middle and small-sized cities, one third in rural areas. Industry, agriculture and services co-exist and characterize the development opportunities. Sustainable rural development in the Alps is not independent on this complexity and the multiple challenges which vary across the local and regional situations. Still, certain common aspects can be identified across the Alps, such as a functional interdependence of rural areas with urban areas as well as demographic change.

The alpine region is a “living space in change”. Interestingly, adaptation, cooperation and the ability to look beyond customary borders is necessary for the people living in the Alps, but was also necessary for the experts which drafted this report, since the topic of “Sustainable rural development and innovation”, cuts across all administrative, political and economic sectors, not to forget that also the topic of energy and climate change had to be considered.

The Permanent Secretariat of the Alpine Convention wishes therefore to thank all the experts and representatives of the Contracting Parties and the Observers of the Alpine Convention for their efforts and valuable contributions. Special thanks go to the Presidency and the members of the ad-hoc expert group set up in order to produce this Report.

Marco Onida, Secretary General of the Alpine Convention
Regula Imhof, Vice-Secretary General of the Alpine Convention,
Responsible for the System for Observation and Information on the Alps

The mandate given by Ministers to the working group that I had the pleasure of leading emphasized the contribution of innovation to the development of mountain territories.

Analyses of experts converged very quickly in establishing the fact that, rather than taking account technological innovations, the organization form of the territorial stakeholders was the main source of innovation in mountain areas - henceforth raised the question of approaching these types of innovations.

Our reflection has been structured around topics which give an important area of action to innovation in our mountain regions: agriculture, energy, tourism ... and to the necessary need of optimization of their human potential.

Finally, we compared our reflections with those of local stakeholders (elected officials, economic and associative representatives...) at the workshop held September 21, 2010 at l'Argètiere la Bessée which associated the services of the European Commission and brings together over 100 participants.

I wish to thank the members of the working group and the focal points of the Contracting Parties for the quality of their collaboration.

*Jean-Pierre Chomienne
Interministerial Agency for Spatial Planning and Regional Attractiveness,
President of the working-group of the Third Report on the State of the Alps*

INTRODUCTION

The mandate to draw up this report was awarded at the Xth Alpine Conference of the Alpine Convention in Evian, March 2009. At that time, it was additionally requested that the report include a special focus on energy. All parties in the Convention nominated experts to work in the established ad-hoc expert group, chaired by France. «Sustainable rural development» and «innovation» were defined as the two main issues of the report, whose objective is to provide a sound basis for reflecting upon rural development in the Alps and the related requirements and policy measures.

The Alpine Convention is a multilateral framework treaty signed in 1991 by the eight states of the Alpine Arc as well as by the European Union. Its main objectives are the sustainable development of the Alpine territory and the safeguarding of the interests of the people living within it. This includes embracing environmental, social and economic dimensions and enhancing the quality of life in the Alps in the broadest sense. In order to achieve these objectives, the Framework Convention has progressively established 8 thematic protocols. In the various protocol articles, the issues of sustainable rural development, energy and innovation are addressed either directly or indirectly.

Rural development has been recognized as “the product of those human activities that use the resources of rural territories to increase welfare” (Errington, 2003); it is the key tool for encouraging diversification and innovation in rural areas. It aims to reverse depopulation processes, stimulate employment and equality of opportunities, respond to growing requests for better quality, health, safety, personal development and leisure, and finally improve the quality of life of Alpine populations.

Sustainable rural development can be achieved through different means or tools, e.g. providing local populations with vocational and technical training and improving access to information, resources and innovative technologies.

Rural development actions mostly aim at social and economic development, encompassing tourism, manufacturing and information and communications technologies (ICT). Rural development concerns several sectors, such as tourism, agriculture, forestry and energy. This is why it is important to recognize the multifunctional dimensions of agriculture, forestry and tourism, which are generally the key economic sectors associated with mountain regions.

Sustainable rural development is also based on the involvement of different levels of government and various local stakeholders, and on the promotion of the sustainable use of local assets and resources as essential for supporting competitiveness. Recourse to investment rather than to subsidies also appears to be one of the key features of sustainable rural development.

The acknowledgment of these facts shows that the point of view of the working group in charge of the “Third Report on the State of the Alps” is in line with the new rural paradigm defined by the OECD in 2006.

A concise definition of innovation is «the successful production, assimilation and exploitation of novelty in the economic and social spheres». In terms of rural development, territorial innovation plays a key role: it must be considered and associated with the pillars of sustainable development, together with the reorganization and sharing of territories, and with the actor and communication networks that lead to territorial competitiveness, attractiveness and economic development.

The report gives an overview of rural development policies spanning local, regional, national and international levels. It identifies the driving forces for sustainable rural development as “socio-economic trends”, “innovation” and “climate change”, and describes the natural resources and human assets in the Alps on which development can be based. National contributions, case studies and examples of best practice give good insights into the key issues of the report.

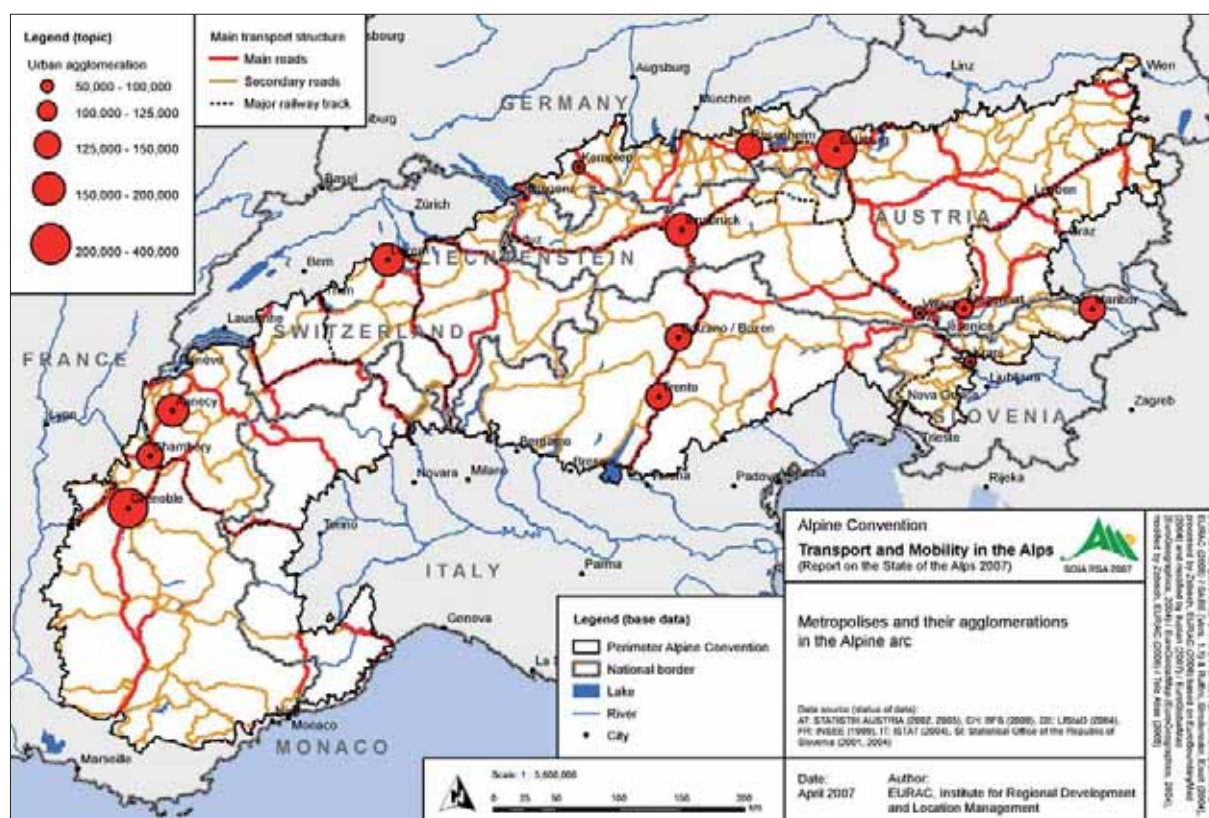
Since different definitions of sustainable rural development exist and are accepted in the different Alpine countries, a common understanding of this concept was sought. Underlying all definitions of the scope of rural development in the different Alpine Countries is the understanding that “rural development” is about governing the development of all areas located outside of urban areas, while at the same time acknowledging the strong interdependence between rural and urban areas.

The report therefore looks generally at the development of rural areas within the scope of application of the Alpine Convention. This view primarily excludes the main urban agglomerations such as Bolzano, Trento, Salzburg, Rosenheim, Innsbruck, Luzern, Annecy, Chambéry and Grenoble (see map n°1). However, as underlined above, rural and urban areas are highly interdependent, especially through their mutual inter-

est in the complementary services they provide each other. The report also takes into account the relation of rural areas to urban centres, in the Alps and beyond. Later in this report, “mountain area” is defined as an area that is delimited by the Alpine Convention perimeter (the members of the Alpine Convention define the perimeter of their territory according to administrative, functional and geomorphic criteria). Nevertheless, the functional relations with surrounding areas will also be taken into account as these are highly important for the understanding of rural development.

Based on an assessment of the state of development in the analysed regions, the report aims to provide recommendations for a strategy for sustainable rural development in the Alps, integrating the objectives and measures of the thematic protocols of the Alpine Convention. In its final part, the report outlines perspectives

Map 1: Metropolises and their agglomerations in the Alpine Arc



Alpine Convention, *First Report on the State of the Alps «Transport and mobility in the Alps», Permanent Secretariat of the Alpine Convention; 2007.*

and conclusions in the field of rural development in the Alps to be considered by the Alpine Conference and European authorities (European Commission and European Parliament).

The current version is a summary of a longer text, illustrated with examples of Good practice and data, available in English on the website of the Alpine Convention.

Conclusion 1:

The Alps are undergoing change (climate change, globalization, decrease in agricultural activities, ageing of the population, brain drain, etc.), and this has an influence on economy and modifies the living conditions in rural areas.

To face these challenges, rural development policies have to take into account societal and environmental developments, in particular by promoting and enhancing Alpine natural resources and human assets.

A SUSTAINABLE RURAL DEVELOPMENT AND INNOVATION IN THE ALPS

Sustainable economic growth is increasingly related to the capacity of global, national, regional and local economies to change and to innovate. Disposing of its own assets and heritage, the Alpine area can play a very important and leading role in European countries and elsewhere. This means that a much greater effort needs to be made to create an environment that encourages innovation, research and development (R&D). The promotion of innovation is indeed a central feature in the Lisbon National Reform Programmes and a main priority for the new Cohesion Policy programmes for 2007-2013. The Europe 2020 strategy (COM(2010) 2020) outlines an expense budget of 3% of GDP to be invested in research and development. Spending on R&D and innovation in the EU budget is forecast to reach 7% in the year 2013. Communication on the re-examination of the budget (COM(2010) 700) calls for an even stronger focus on innovation.

For rural areas, innovation is widely regarded as one of the key factors of increased competitiveness. Innovation can contribute to more creative uses of natural resources and human assets. Innovation is a cross-cutting theme common to all different economic activities. The economic structure of rural areas is mainly made up of small and medium-sized enterprises (SME's). SME's cannot usually afford to run an R&D department. External input is likely to boost the innovation process. SME's can benefit from cooperation between the public and private sectors as well as R&D institutions and be further strengthened by organizational and territorial innovation.

Another main challenge for companies in rural areas is access to research and development institutes as these tend to be located in urban areas. Owing to the particular situation of rural areas, public intervention to encourage innovation can be justified.

Numerous instruments exist on a European and national level to encourage innovation. Some of the programmes of particular interest for rural areas are:

- The measures of the second pillar of the CAP, particularly those dealing with innovation.
- The measures of the cohesion policy, especially European territorial cooperation. Between 2007 and 2013, EU Cohesion Policy instruments are to invest some € 86.4 billion (almost 25% of the total) in R&D and innovation, including the mainstreaming of innovative actions and experimentation.
- The Seventh Framework Programme 2007-2013 (FP7), which has a budget of € 50.5 billion. There are four parts to FP7: (1) Cooperation (involving, amongst others, health, food, agriculture, fisheries, biotechnology, information and communication technologies, energy, the environment, transport and socioeconomic sciences); (2) Ideas; (3) People and (4) Capacities (including support to SME's).
- The European Institute of Innovation and Technology (EIT), which was recently set up to address Europe's innovation gap. The EIT aims to emerge as a key driver of EU sustainable growth and competitiveness through the stimulation of world-leading innovation and by bundling European innovation activities.
- The DG Environment "LIFE+" programme, which aims to introduce environmentally-friendly and sustainable actions, including sustainable practices for land cultivation. In 2010, € 243 million were released to co-finance projects.
- The DG Employment and Social Affairs "Catalysts for change" programme supporting measures for innovation through the European Social Fund (ESF).
- The i2010 strategy aims to promote the information society with a special focus on rural areas. With the European Economic Recovery Plan, a European broadband initiative has been launched. The aim is to achieve 100% coverage by the year 2013. The European ini-

tiative is backed up by national broadband initiatives.

- The Regional Innovation Monitor was launched in autumn 2010. It gives an overview of regional innovation support measures, provides a benchmarking tool to compare regional innovation and constitutes a platform for knowledge sharing and practice dissemination (more information on www.rim-europa.eu).

The above list shows that numerous instruments exist at European level. Further instruments and measures to encourage innovation exist at national and regional levels. For enterprises it is sometimes difficult to get an overview of all these measures and to choose the appropriate approach. Providing guidance and assistance for enterprises should therefore be an important activity for public authorities.

There are several approaches aiming to encourage innovation in rural areas:

- Clustering of enterprises working in a specific field and on a given territory
- Creation and fostering of networks of enterprises to exchange experience and learn from each other
- Promotion of cooperation between enterprises and R&D institutes
- Facilitated creation of specific university branches and specialized training institutes in mountain areas, with sufficient autonomy to define their own programmes and the capacity to develop partnerships with businesses and populations
- Provision of the necessary hard and soft infrastructures to enable enterprises to innovate and be competitive (e.g. broadband access, venture capital).

Conclusion 2:

For rural areas, innovation is widely regarded as one of the key factors able to increase competitiveness. For companies in rural areas, access to research and development institutes, which tend to be located in urban areas, is difficult. Given the particular situation of rural areas, public intervention to encourage innovation is justifiable.

Conclusion 3:

Small and Medium-sized Enterprises can benefit from cooperation between Research & Development institutions and public and private sectors. Organizational and territorial innovation can strengthen them further.

Outcomes of the “Innovation in the Alps” seminar 21st September 2010, l’Argentière la Bessée (France)

Approach to the innovation process:

- **Reflect complexity:** Innovation in tourism and sustainable development in general has to integrate different expectations, sectors and views reflecting the context and complexity of Alpine reality. This means that contradictory concepts such as “global and territorial”, “consensus and social change”, “risk and feasibility” and “social, economic and environmental”, have to be brought together.
- **Build cooperation:** Cooperation must be fostered from beginning to end. Different actors are important to create and successfully implement innovation. They may belong to the local population and enterprises, or be workers, financiers, social institutions, researchers and teachers. The better cooperation is between the different actors the more successfully innovation will be sustained. Each specialist can contribute their special knowledge and experience.
- **Identify priorities:** Innovation is a tool to respond to certain needs and solve problems. It is not an objective in itself. The overall value of innovation implies other values such as “economic autonomy”, “solidarity”, “the fight against climate change”, “democracy”, “participation”, “a territorial approach” or “a bottom-up approach”. While diversity is important, it must be remembered that certain activities may contradict each other. Decisions about priorities must therefore be taken according to the assets of the different regions. This means that the priority-setting process must be organized seriously and involve the population at large. It must also lead to the long-term education and training of people to enable them to analyze and manage change.
- **Evaluate innovation:** Measuring the impact of innovation is important for policy development and so that framework conditions can be adjusted. Innovation has to be measured, especially with respect to its impact on sustainable development, society and the territory concerned. It is also important to assess the transferability of innovation based on identified values.
- **Capitalize on successful experience:** There are already many successful innovation processes. The institutional and financial means, together with the necessary competences, have to be mobilized. Finally, successful innovation experience can be transferred into policy and framework conditions.

The role of public policies aiming to support innovation could be to:

- a) Launch and maintain a far-reaching public process: organization of cooperative processes on local and regional levels and shared acceptance of the “risk” of not knowing the outcomes - financing must not be based on the success of an innovative process
- b) Secure financing for innovative processes and their outcomes
- c) Motivate communities and regions to participate in networks and processes
- d) Support existing approaches and good practices
- e) Embed innovative elements effectively in regional and national strategies
- f) Support the creation of local and regional economic benefits stemming from sustainable strategies
- g) Increase public awareness about the importance of innovation and possible financing

As research and education institutions often play crucial roles in innovation processes, it is important that they become interested in the issue of innovation in mountain areas. An ongoing dialogue with mountain stakeholders in order to consider their needs and ideas must be created. Research studies should be oriented towards the satisfaction of mountain actors' needs. Partnerships with mountain actors should be established to ensure an effective transfer of know-how and technology. The Alpine Convention could take a proactive role in defining research topics that are of particular relevance for the Alpine Arc.

R&D institutes located in the Alpine area should be encouraged to have more specialization in terms of local needs and problems, and to capitalize on specific resources of recognizable economic value.

The actors of rural development have an inherent goal and incentive to search for innovation to increase their competitiveness. They should seize the opportunities offered by the financial support systems available for developing innovation and make use of the opportunities offered by various networks, including social and professional networks to exchange experience and engage in a process of mutual learning.

B MOUNTAINS AS STRATEGIC AREAS IN EUROPE – TERRITORIAL DIVERSITY AND SPECIFICITY FOR SUSTAINABLE DEVELOPMENT

Mountains are strategic areas in Europe because of their natural and cultural assets with respect to the surrounding lowland areas such as water, biodiversity, recreation and local culture. Their function as an early warning system has also proved to be of utmost importance in these times of climate change. They should not be seen only as “least-advantaged areas” but as areas with specific potential requiring a “territorial-specific” approach and specific instruments. The perception of mountain areas in Europe has considerably changed over the last 20 years. In the past, mountain areas were too often considered as disadvantaged regions due to their altitude or other natural factors in conjunction with socio-economic factors, spatial imbalances and environmental decay. However, today the situation has changed; mountain areas are perceived as regions “endowed with economic development potential”, in spite of the high amount of agricultural aid they still receive. However, pressure on the ecosystem of these regions has increased, posing new threats to the environment. Mountain areas are also threatened by international road traffic. New opportunities may also be provided by modern telecommunications infrastructures, which – although slow to be installed due mainly to geographical features – can help to overcome many of the accessibility problems facing these regions.

Market rules cannot be applied to mountain territories in the same way as in flatlands. For example, the value of a mountain cheese, besides covering the value of the cheese’s intrinsic qualities, also contains the contribution of agriculture to the quality of the landscape and other ecosystem services provided through its maintenance, not to mention the cheese’s contribution to a region’s gastronomic heritage. Policy should therefore contribute to balancing market unbalances.

B.1 IMPLEMENTING RURAL DEVELOPMENT POLICIES

The competences and responsibilities for sustainable rural development are given to different administrative levels: while national authorities are responsible for coordination, the development of strategies and policies and the setting of the framework conditions for sustainable development, the «regions» (German “Länder” and districts, Austrian Provinces and districts, French regions and departments, Swiss cantons, Italian Provinces, Slovenian regional councils) are responsible for territorial planning (e.g. legislative matters, policy implementation, the amount of financial autonomy, infrastructure, services, etc.) or strategic programming and implementation (e.g. Slovenia has 12 regional councils for 12 statistical regions; these do not have legislative power but are in charge of strategic development programming and project implementation). Municipalities are in charge of local development and spatial planning. As the different mountain areas of Europe cover a significant proportion of European space, and include both rural and urban areas, almost all legal instruments of the European Union, individual states, and sub-national entities such as provinces, regions, or “Länder”, apply in one way or another to mountain areas. At European level, the requirement to focus specifically on mountain regions is written into article 174 of the Lisbon Treaty defining territorial cohesion. One of the aims of the EU 2020 strategy is to turn the EU into a smart, sustainable and inclusive economy. The specific assets of mountain regions can definitely contribute to the objective of improving the EU’s performance in:

- **Education, research/innovation** (creating new products/services that generate growth and jobs and help address social challenges), and **digital society** (using information and communication technologies);

- building a **competitive low-carbon economy** that makes efficient, sustainable use of resources, **protecting the environment** and preventing biodiversity loss, capitalizing on Europe's leadership in developing **new green technologies** and production methods, introducing **efficient smart electricity grids, harnessing EU-scale networks** to give businesses in mountain areas (especially small manufacturing firms) an additional competitive advantage, and **helping consumers** make well-informed green choices;
- raising Europe's employment rate – **more and better jobs**, especially for women, young people and older workers, helping people of all ages anticipate and manage change through **investment in skills & training, modernizing** labour markets and welfare systems, and ensuring the **benefits of growth reach all** parts of the EU.

Mountain regions therefore need specific approaches to address their specific characteristics. The majority of European countries have set up mountain policies. These are mainly sector-based policies with specific adaptations to mountain areas (Dax, 2008). For example, the scale of intervention might be adapted to the particular challenges facing mountain regions. Better coordination between transversal policies such as cohesion policies (European Regional Development Fund (ERDF), the European Social Fund (ESF) and the European Agricultural Rural Development Fund (EARDF)), and between sector-based policies, would undoubtedly improve efficiency. In particular, efficiency could easily be enhanced by adopting the appropriate level of coordination for the CAP (Common Agricultural Policy) – in particular its rural development actions and the Cohesion policy. For example, several sector-based initiatives on mountain and hill-farming in “least-advantaged areas”, actions in favour of mountain forests, or focusing on renewable energies, SME's, the environment and biodiversity, have been carried out as part of territorial cooperation programmes. Aiming to improve inter-regional, transnational and cross-border cooperation, these are part of the 2007-2013 Cohesion

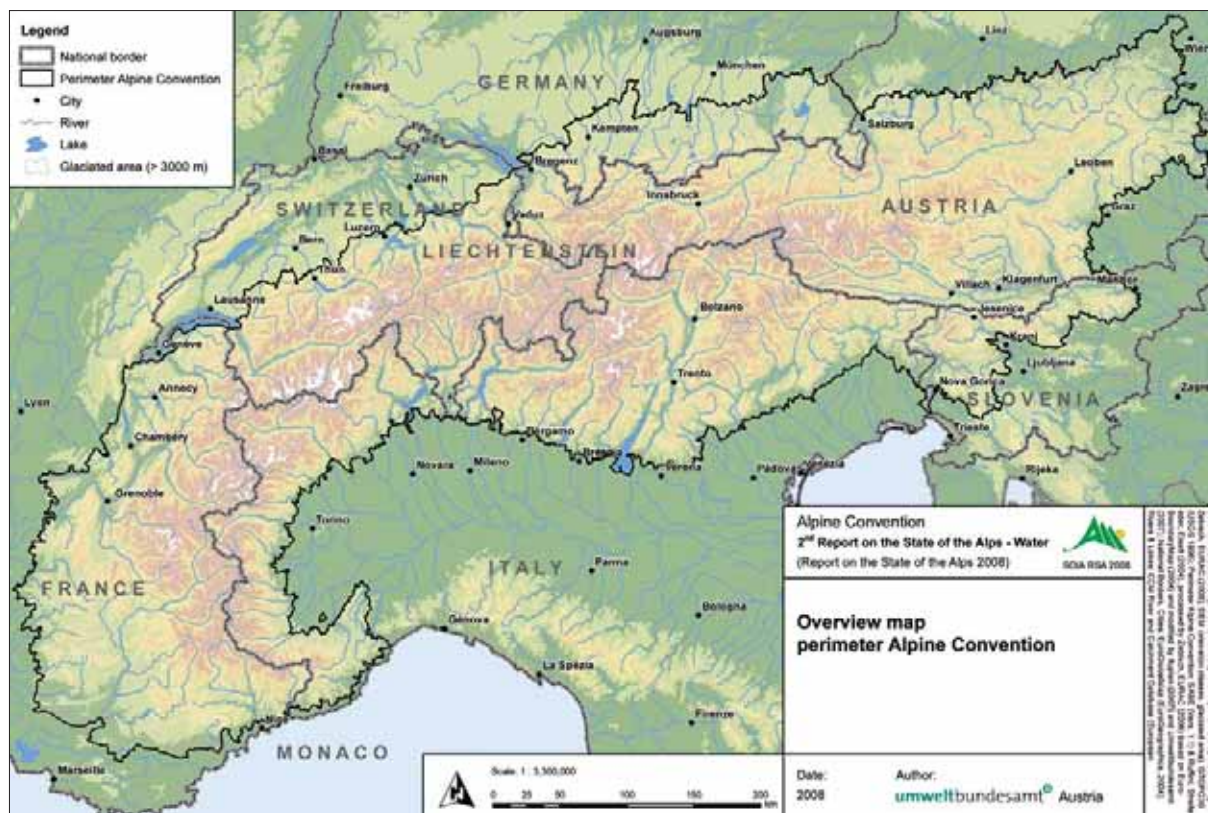
policy and address sustainable mountain development both directly and indirectly (Interact Pro Monte project has identified that almost 50% of mountain regions are border regions in the EU and many mountain „massifs“ are using the Interreg initiative for their local development).

For the Alpine area, the LEADER initiative (Axis 4 of the EAFRD - European Agricultural Fund for Rural Development) and the ALPINE SPACE programme act as a reference. Hence, different tools have already been set up within the framework of rural development policies. However, none of these are exclusively and specifically applicable to the entire Alpine region. There is no single territorially-integrated policy framework for Europe's mountains covering all the relevant parts of sector-based and transverse policies.

B.2 THE ALPS: A TERRITORY SUBJECT TO DIFFERENT GOVERNANCE STRATEGIES

The Alpine territory borders different areas and these form many intermediate types of geography. While the Alps see the surrounding lowland areas as their natural hinterland, the lowland areas themselves consider the Alps to be their natural hinterland. Nevertheless, there are strong interconnections between these different types of areas. When it comes to addressing the problems of a specific area, the best approach is a functional approach encompassing the area in which the problems detected can be efficiently solved with the support of a multilevel governance system. Harmonized territorial management plays a substantial role in territorial development. It is especially important for different administrative levels and stakeholders to cooperate vertically and horizontally when preparing the policy objectives for specific areas. In the case of the Alps, there are various governance levels. These range from local, regional, national, cross-border to transnational levels, and offer a wealth of opportunities for addressing problems at the appropriate governance level.

Map 2: Alpine Convention Perimeter



Map 3: Alpine Space



Map 4: South East Europe**Map 5: Central Europe****Map 6: North West Europe****Map 7: Mediterranean area**

Maps 3 to 7: European Regions for regional policies

www.ec.europa.eu/regional_policy/atlas2007/transnational/index_en.htm

Territorial cooperation programmes are also characterized by a functional territorial approach. Indeed, the Alpine area is included in different territorial cooperation programmes, each of which deals with similar problems but in a specific territorial setting.

The Alpine Space territorial cooperation programme also includes lowland urban areas as these are functionally connected to the Alpine territory. In the case of South East Europe, the Alpine territory forms a functional hinterland to part of a very diverse area. From the point of view of Central Europe, on the other hand, the Alps (at least in part), belong to a territory stretching from the Mediterranean to the Baltic.

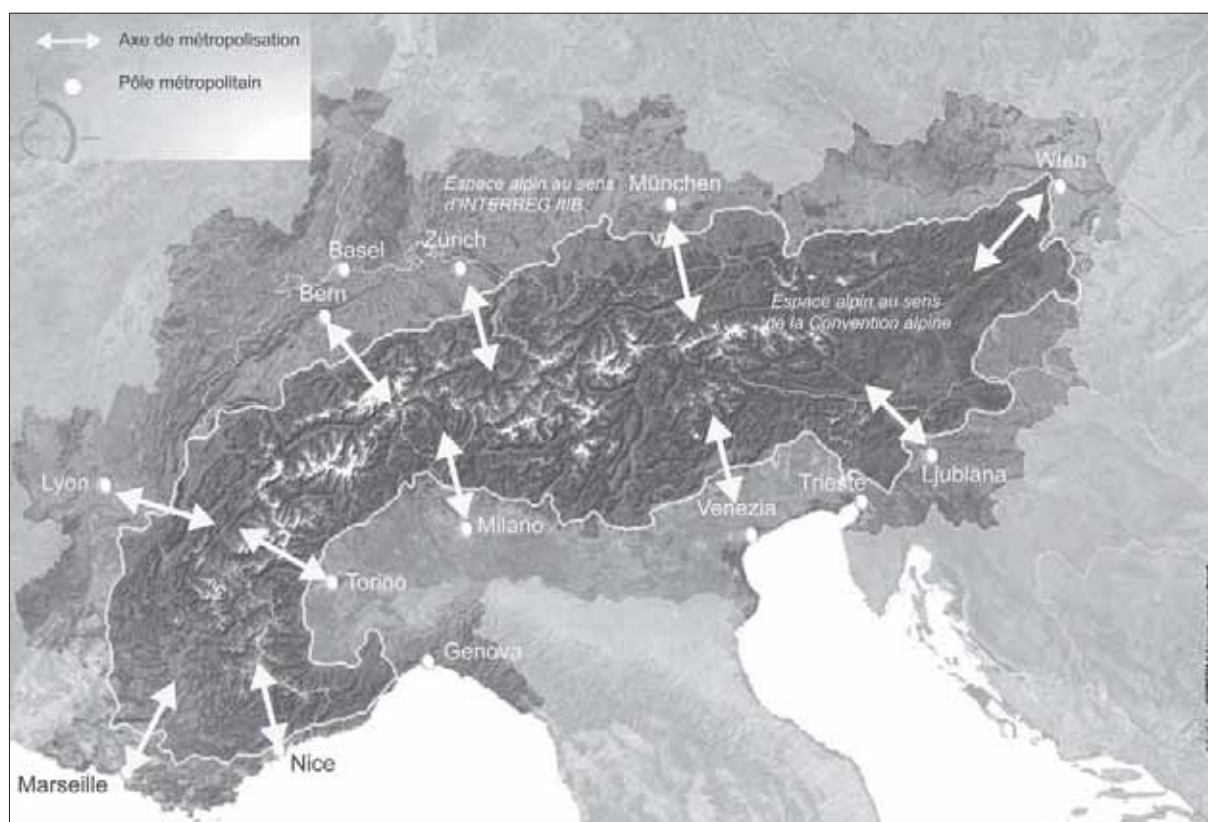
Representing one of the most important mountainous regions in Europe, the Alpine Convention has the advantage of providing a platform and instruments for the development of a joint framework for an Alpine mountain policy that

goes beyond national borders and takes into account population, employment, business dynamics, climate change and territorial governance.

Aside this territorial view, a rather “functional” view of the Alps is used in scientific analysis. This may be very attractive for future consideration and development of the Alpine Arc: the work done by the Regional Environmental Governance (www.reg-observatory.org) and the study of metropolises and “their” Alps by the International Scientific Committee on Research in the Alps (ISCAR) offer challenging smart perspectives for the future of the Alpine Convention and for the Alpine Arc with respect to the key issues of multilevel governance and urban-rural links.

Moreover, the 5th report on Cohesion recently published by the EU also addresses these issues and outlines possible ways in which the Alpine Arc might actively participate in the process of

Map 8: The exceptional position of the Alps defined by their relation to their surroundings

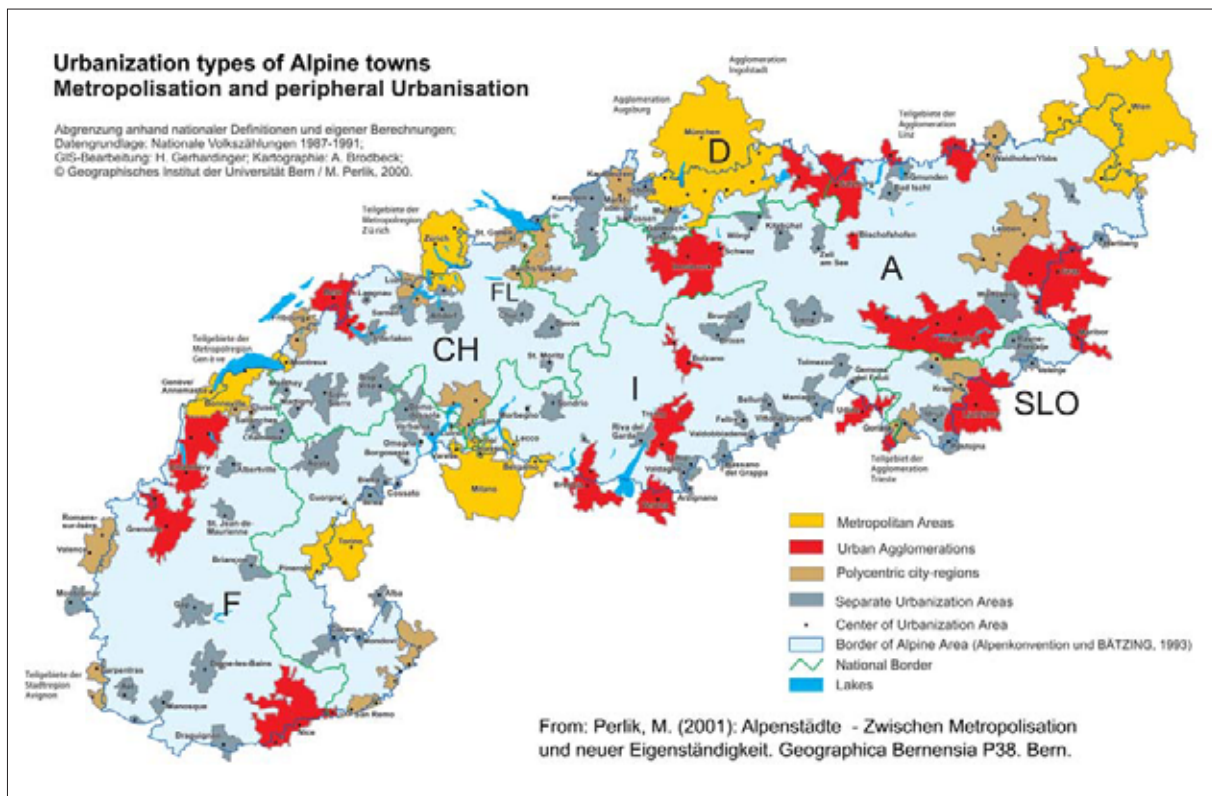


Vanier M.; *Revue de Géographie alpine* 2006; Tome 94 Nr. 2, «Visions alpines au service de la coopération transnationale»; p. 86; 2006.

multilevel governance. The example of the Baltic Sea strategy provides the Alps with an interesting first approach, suggesting how the main EU and national policies might focus on identified objectives such as the environment, climate change, transport and SME competitiveness, and how to

increase coordination between transversal and sectoral policies. It should also be noted that specific territories might adopt approaches at a different scale of intervention to help them seize specific opportunities and hence strengthen the solidarity between urban and rural areas.

Map 9: Alpine agglomerations and perialpine metro-regions



Perlik M.; Alpenstädte – Zwischen Metropolisation und neuer Eigenständigkeit; 2001.

Table 1: Organization of the different administrative levels of rural development policies in the Alpine countries

Country	European level	National level	Regional level	Local level
Austria	<p>Common Agricultural Policy (CAP), and in particular its second pillar.</p> <ul style="list-style-type: none"> - the EAFRD (European Agricultural Fund for Rural Development), financial instrument and programme 2007-2013 for rural development. <p>Objective 2 areas (new), particularly those parts focusing on the problems of rural areas</p> <ul style="list-style-type: none"> - Rural Development Plans, according to Reg. (EC) 1257/1999. - LEADER+ programmes large scope for innovative actions, networking activities and, what is essential for future perspectives, relying on a structure that allows for a certain degree of experimentation in its measures. LEADER+ programmes are linked to the Rural Development Plans since they cover their fourth priority line of action. 	<p>General task is the coordination of territorial policies.</p> <p>Development and implementation of rural development strategy plan and programme 2007-2013 (RDP) as a horizontal scheme.</p> <p>Planning issues in the fields of e.g. trade and industry, water and forests and mining.</p> <p>Coordination of territorial policies. Funds and information services are jointly carried out by the federal state, the Länder and the municipalities.</p> <p>General task is the coordination of territorial policies.</p> <p>Hexagonal Rural Development Program (PDRH) defines the general framework of actions and measures, according to the European level.</p> <p>National strategy plan for rural development 2007-2013.</p> <p>National Strategy plan, general framework in line with European policy.</p> <p>2007-2013. Rural development programme preparation of strategies, policies, national plans, programme, and priorities, including rural development.</p> <p>general framework for development + nature relevant fields (forest, water, agriculture...)</p> <p>General frame for spatial planning and regional policy. Direct competency in rural development in the field of agriculture.</p>	<p>The 9 Länder have a high autonomy in legislative matters and policy implementation and some financial autonomy. They support the regional performance of rural areas (spatial planning, regional development, protection of nature, environment and cultural heritage, agriculture and forestry (in the national framework), tourism and settlements and housing). Funds and information services are shared by the federal state, the Länder and the municipalities.</p> <p>The Regions are in charge of spatial planning and the implementation of rural development. The PDRH is broken down into 21 DRDR (Regional Document for Rural Development).</p> <p>Operational programmes of the Bundesländer. Implementation of the LEADER actions.</p> <p>21 Rural Development Plans (for each region and the 2 autonomous provinces).</p> <p>12 development regions implement regional development plans and these form the basis for project applications at local level.</p> <p>The cantons are in charge of spatial planning. The cantons are also the key actors for regional policy through their multiannual application programmes.</p>	<p>The «Regionalmanagements» are in charge of regional cooperation and development. Furthermore, many municipalities in the mountains have engaged in thematic networks to enhance collaboration across the Alpine range on important issues of mountain development. Municipalities are responsible for local development planning.</p> <p>Implementation of the LEADER actions. Coordination at intermunicipal level through regional parks, areas and "départements".</p> <p>A certain amount of authority for special planning procedures (urban land use planning, Landscape planning). Intermunicipal cooperation through the «Regionalplanungsverbände».</p> <p>Implementation of the LEADER actions by Leader action groups. Intermunicipal coordination through the «comunità montana».</p> <p>Spatial planning and development policy at local level. Rural development is not specifically distinguished in policies.</p> <p>Main authority for land use planning.</p> <p>The regional policy is implemented by the regions (intermunicipal level). Spatial planning is implemented by the municipalities.</p>
France				
Germany				
Italy				
Slovenia				
Liechtenstein				
Switzerland				

Conclusion 4:

By addressing the problems of a specific area, such as the Alps, a functional approach appears to be the most suitable type of approach, encompassing the area in which the problems detected can be efficiently solved and supported by suitable governance levels.

Conclusion 5:

Generally, rural development can be assessed as part of a more general regional development concept, and thus it is influenced by a wide variety of policies.

Conclusion 6:

The Alps represent one of the most important mountainous regions in Europe. A territorial framework has been developed through the Alpine Convention in order to set up common approaches, transnational instruments and regional cooperation in the Alps beyond national borders.

Conclusion 7:

Mountains are strategic areas in Europe because of their useful natural resources and human assets and their function as an early warning system in times of climate change. They should not be seen as “least-advantaged areas” but as areas with different types of potential that require a territory-specific approach and specific instruments.

C DRIVING FORCES FOR DEVELOPMENT IN THE ALPS

The Alps face many challenging issues such as demographic change, international economic competition, climate change, energy supply, difficult access, limited welfare and social infrastructure. Together, all of these challenges can act as drivers of an integrated approach to rural development.

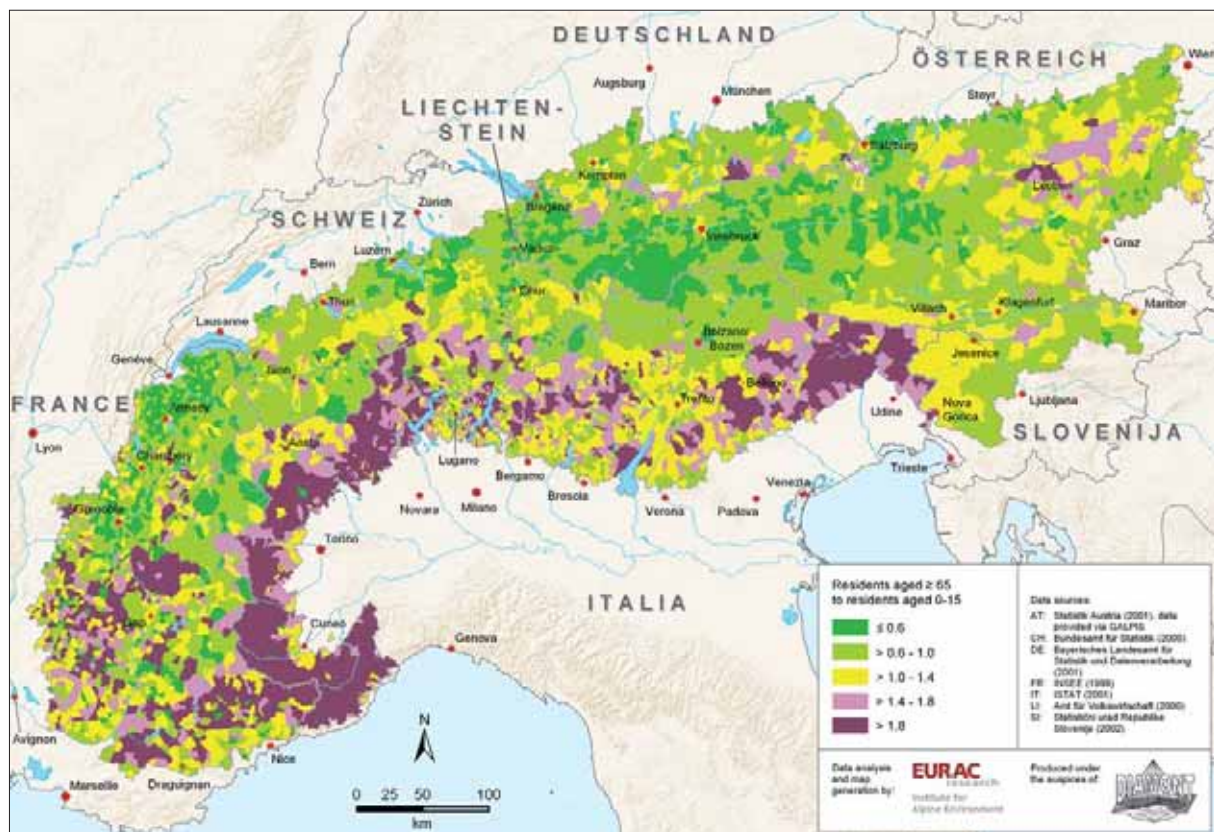
C.1 SOCIO – ECONOMIC TRENDS

Between 1990 and 2000, around 67% of Alpine municipalities recorded a population growth and around 26% suffered a decline in population. These areas, showing either an increase or decrease in population, are located closely together. In the year 2000, around 1/3 of the popula-

tion lived in urban centres of between 5.000 and 25.000 inhabitants. Structural change has led to the migration of younger people towards centres, where the education and training offers are better and there is a larger number and variety of jobs. At the same time, over 63% of Alpine municipalities are considered to be “over-aged”, with Italy accounting for 41% of these municipalities (Tappeiner, Borsdorf, Tasser, 2008).

Like population decline, population ageing is particularly apparent in small municipalities with less than 500 inhabitants and urban settlements with more than 25.000 inhabitants: almost 60% of the former and approximately 70% of the latter (and almost 90% of municipalities with over 50.000 inhabitants) have an old-age index above 100.

Map 10: Old to young age dependency ratio



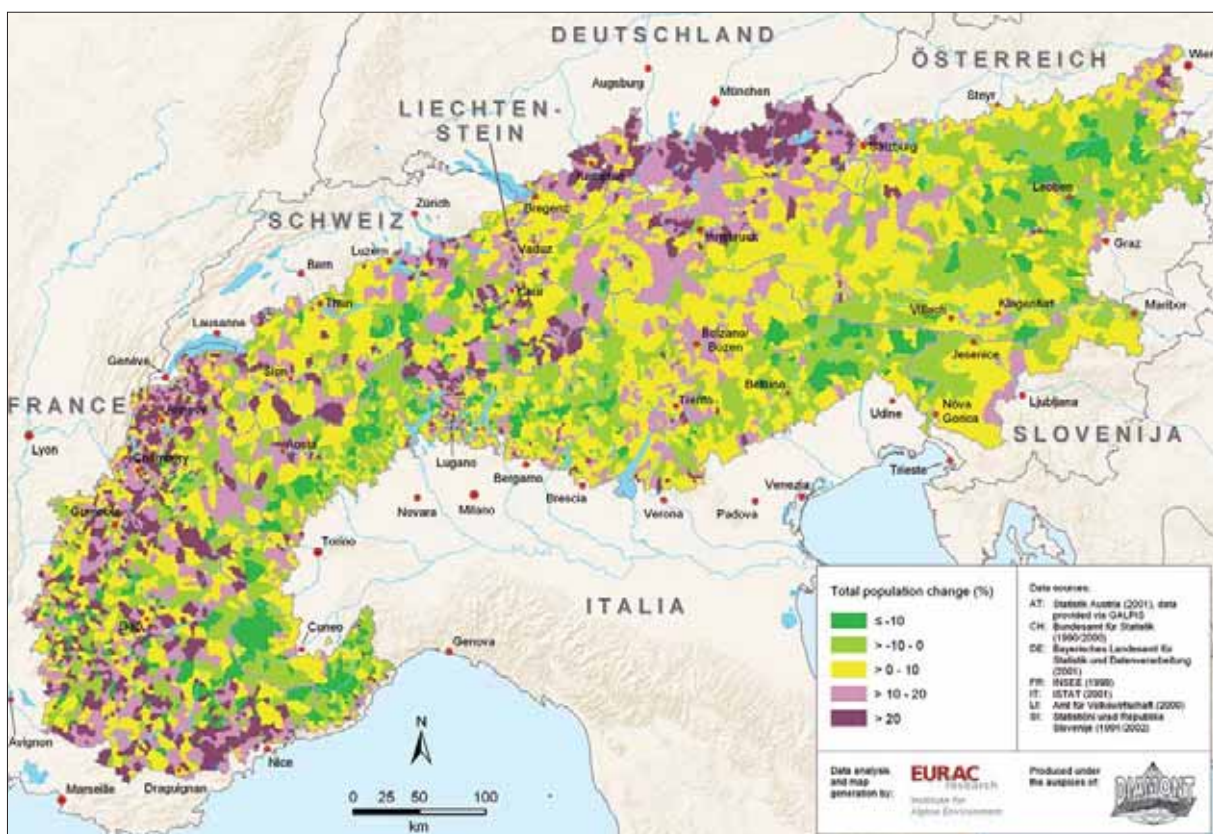
Throughout the whole Alpine Convention area, average population density is 73 people per km² (EUROSTAT 2004) showing that the Alps are one of the less-populated regions in Europe. It is important to note that topography plays a key role in analysing the reasons for the observed population density patterns in mountainous regions. Many parts of the Alps are considered as unsuitable for human settlement. This means that the average population density in the areas of permanent settlement is 526 people per km², which is comparable to the density of metropolises located outside the Alpine Arc.

Population density distribution in the Alpine Convention area significantly reflects the topographical situation. Higher population densities occur along the Alpine fringe and in the foothills of the Alps. Many small centres have developed in these parts owing to the advantageous site conditions. These settlements come into conflict with agricultural land use.

In contrast to the large intra-Alpine valleys, the poorly-accessible peripheral Alpine areas are characterized by municipalities with a low population density. These are found in areas close to the central mountain chain.

In prospering regions of the Alps, an increase in urbanization of the valleys' centres has been recorded. Industrial activities tend to move from cities to surrounding municipalities, for example into business parks or along major transport routes. Indeed, accessibility via the transport infrastructure and the availability of land are crucial location factors. Such municipalities are mainly rural, lying close to the large cities along the Alpine fringe, especially near the border of the Alpine Arc. According to the INTERREG IIB Alpine Space project DIAMONT analysis, there is a general trend in the Alps whereby areas are either marginalized or urbanized. In other words, as stated in the EEA mountain report,

Map 11: Total population growth between the last two censuses



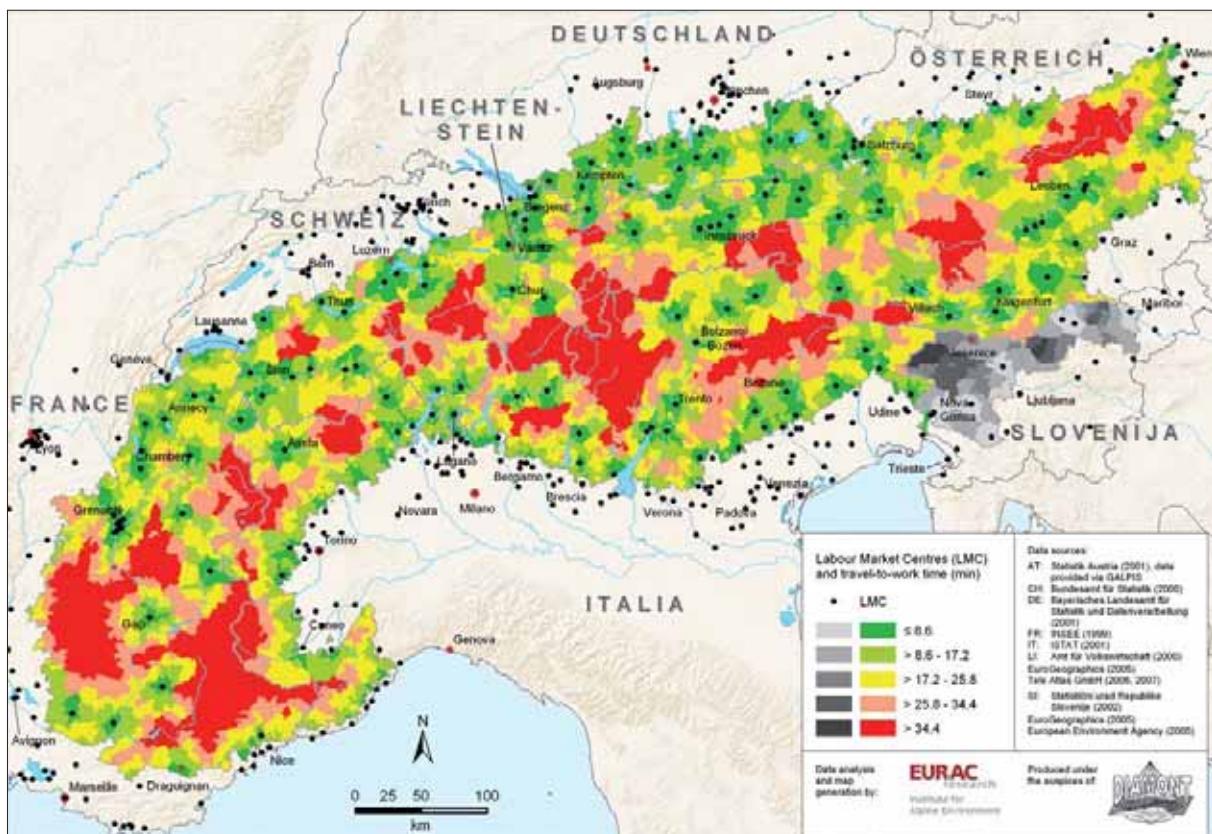
“two opposing general trends can be observed: first, the abandonment of traditional agricultural areas and their related settlements in favour of easier job opportunities in services or industry; second, the concentration of economic power, labour markets, and public services in the easily accessible core towns of the Alps” (EEA, 2010). The EU tries to stave off these effects by providing subsidies. These help to slow down the process but do not reverse it or prevent peripheral areas from becoming more and more marginalized. Furthermore, these subsidies cannot provide a viable long-term solution. Only more complex action can lead to a new role for mountain territories on the global market.

Nevertheless, the general dynamics of business and employment in the Alpine area is subject to the same tendencies as the “non-Alpine area”: the number of people employed in agriculture

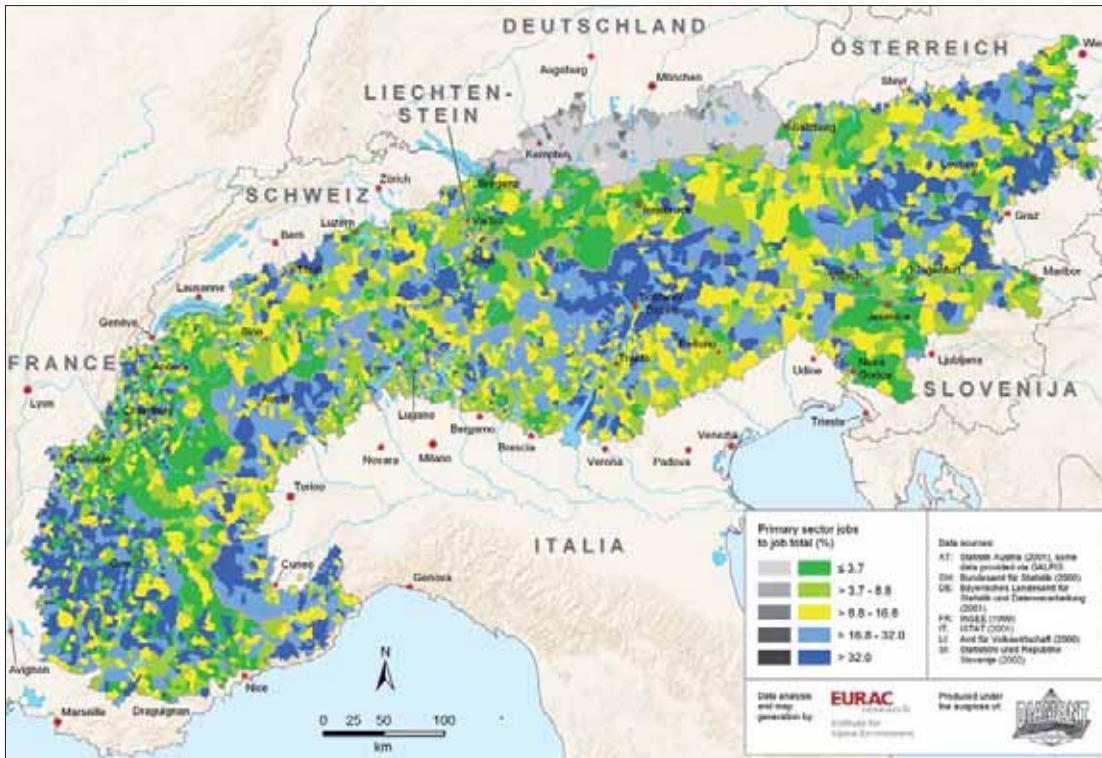
and forestry has dropped drastically, industry and manufacturing still account for a large proportion of total employment, and the shift of jobs towards the tertiary economy is quite marked and is reflected in the sharp development of the tourist industry.

Between 1990 and 2000, Slovenia, Italy and Germany recorded particularly severe reductions in the surface area used for agriculture. Small reductions were also made in Austria and Switzerland. In Switzerland, calculations within the framework of the national research programme (NFP 48) suggest that by 2015 around 20% of active farms in the year 2002 will no longer be active when the next generation change occurs. Some areas, however, show a trend reversal. For example, a slight increase can be noted mainly in Western Austria and in the French Maritime Alps.

Map 12: Labour Market Centres and travel-to-work time (min)

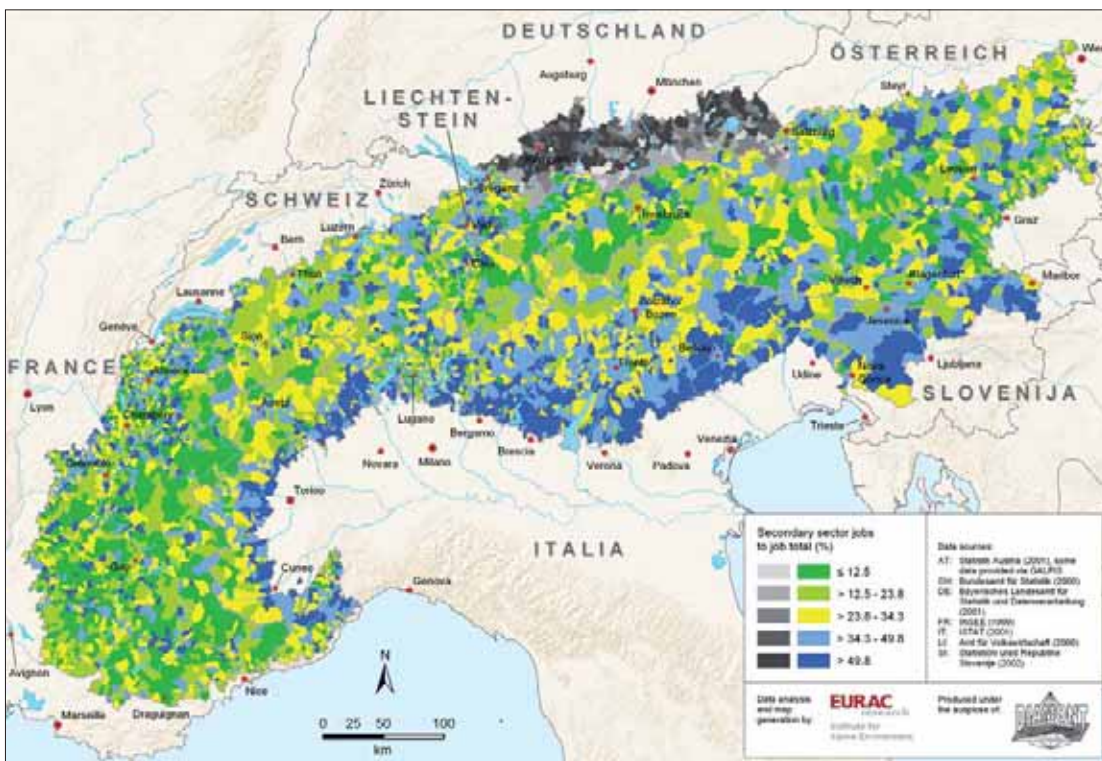


Map 13: Primary sector jobs, year 2000



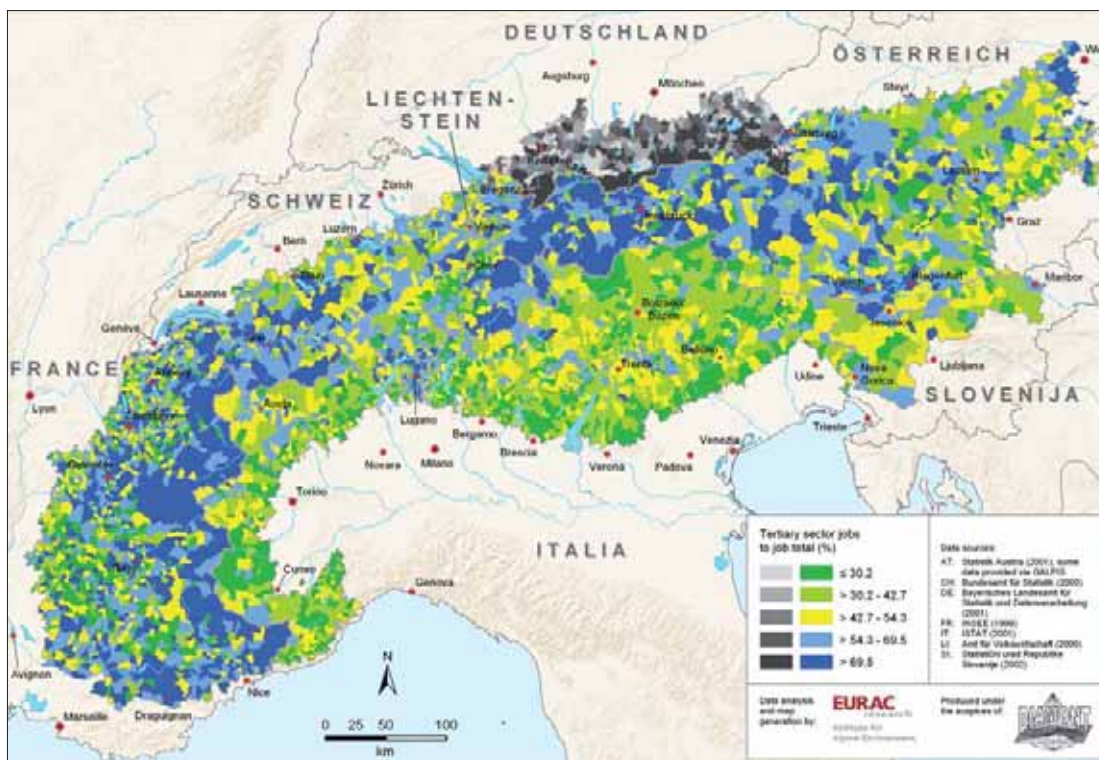
©TAPPEINER U., BORSDORF A., TASSER E. (eds) Mapping the Alps, Spektrum Akademischer Verlag; Heidelberg; 2008.

Map 14: Secondary sector jobs, year 2000



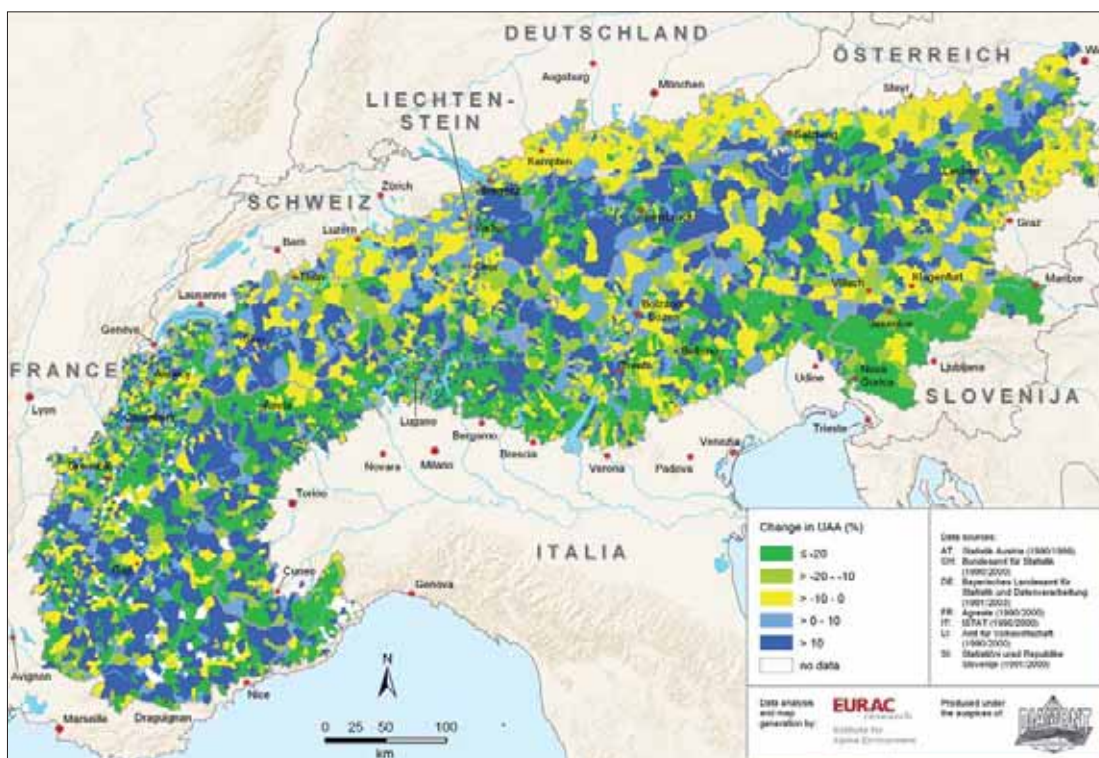
©TAPPEINER U., BORSDORF A., TASSER E. (eds) Mapping the Alps, Spektrum Akademischer Verlag; Heidelberg; 2008.

Map 15: Tertiary sector jobs, year 2000



©TAPPEINER U., BORSDORF A., TASSER E. (eds) Mapping the Alps, Spektrum Akademischer Verlag; Heidelberg; 2008.

Map 16: Change in used agricultural area



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Because agriculture has been recognized for its major role as a multifunctional activity (production of traditional cultural landscapes, preservation of biodiversity, impact on economic structure, as well as on local society and culture), public funds have been developed specifically for mountain areas. The different rural development programmes of each Alpine country aim to promote the competitiveness of mountain farming. However, reliance on public spending is not a long-term solution and a more market-oriented approach should be developed. PES (Payment for Environmental Services) schemes, which have been adopted throughout the Alps, are a positive example of the creation of value through agricultural services.

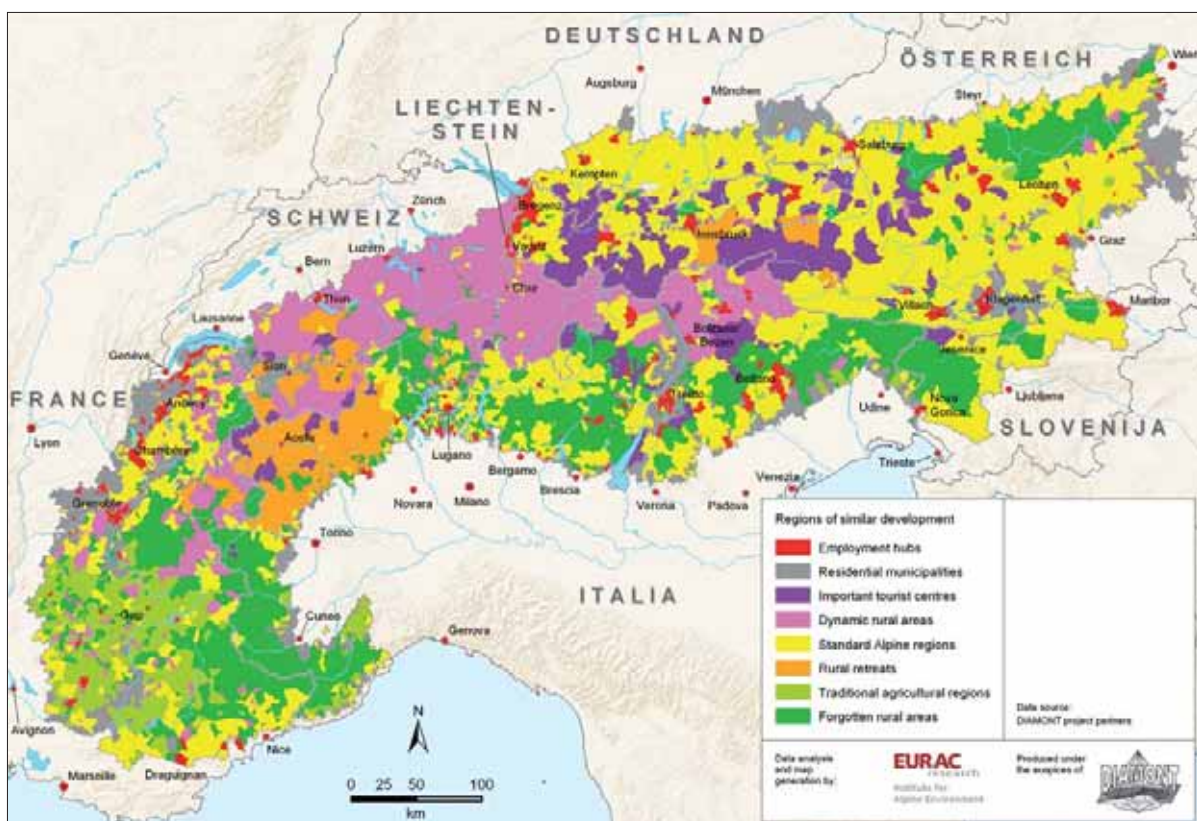
According to the DIAMONT project, demographic changes on a regional level correspond to an

uneven distribution of jobs. The map 17 shows classification of regions according to whether they are “forgotten areas”, mainly found in the southern part of the Alps, or “employment hubs”, spread right across the Alpine Arc.

C.2 INTERRELATIONS BETWEEN URBAN AND RURAL AREAS

Rural and urban areas are in fact highly interdependent, especially through their mutual interest in the complementary services they provide each other. This applies to smaller centres in the Alpine Perimeter but also to larger centres at the border of the Alps. Urban areas are more likely to supply services for public transport, health or education, whereas rural areas are good at providing ecosystem services and energy resources

Map 17: Regions of similar development



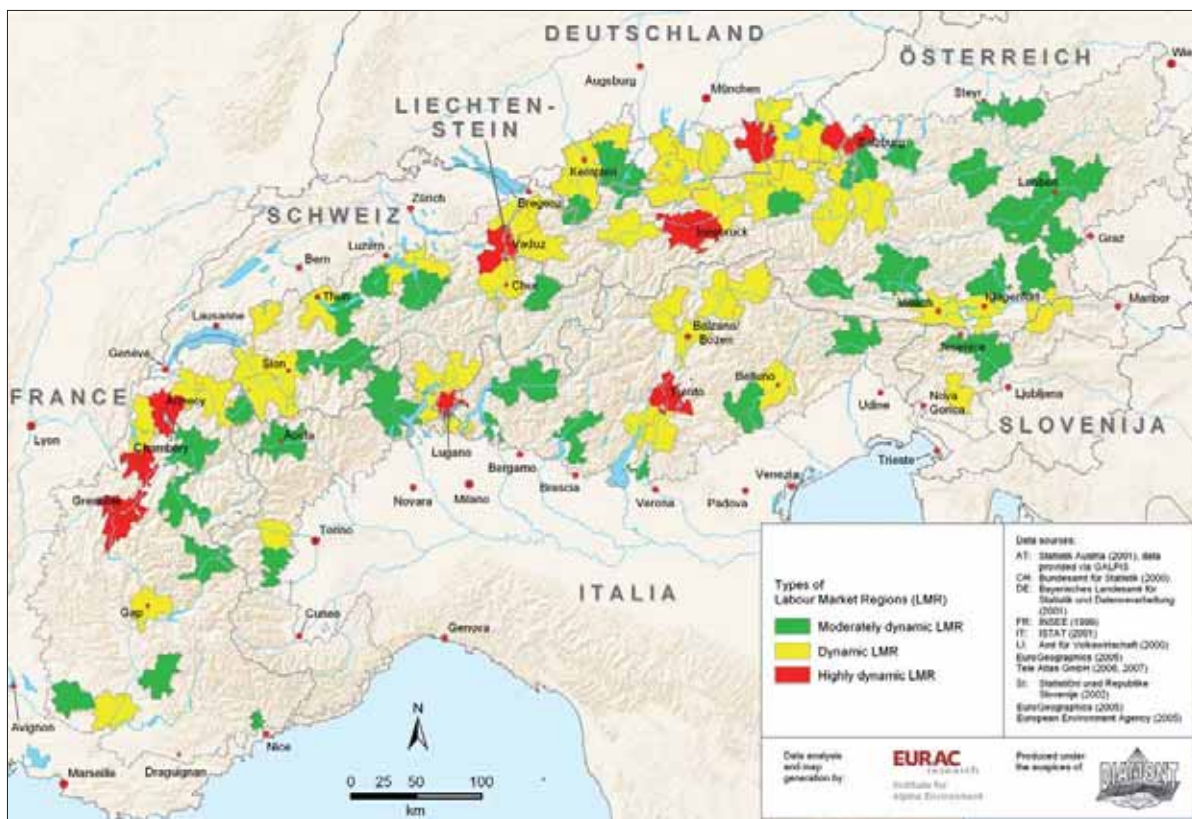
©TAPPEINER U., BORSDORF A., TASSER E. (eds) *Mapping the Alps*, Spektrum Akademischer Verlag; Heidelberg; 2008. Cluster analysis using selected indicators covering all areas of sustainability in equal measure: eight clearly delimited development structures in the Alps

and offer high quality services in terms of recreation, landscape and nature. However, general interest services such as postal services, child care, food shops, education, health care, broad band access, and access to road networks and public transport are important in the 21st century and they cannot be concentrated in centres alone. Public services are also critical factors for quality of life and continued social cohesion in rural areas. It is a challenge to find a balanced approach to the organization and accessibility of services, on the one hand, and to the fair use and management of rural resources, on the other. The second can be provided through benefit/support mechanisms in the regions where the resources are available, bearing in mind that the availability of infrastructures for use of the resources is not enough alone. For efficient and successful general interest services a user-oriented approach is crucial and must be backed up by good coop-

eration between authorities, users and service providers.

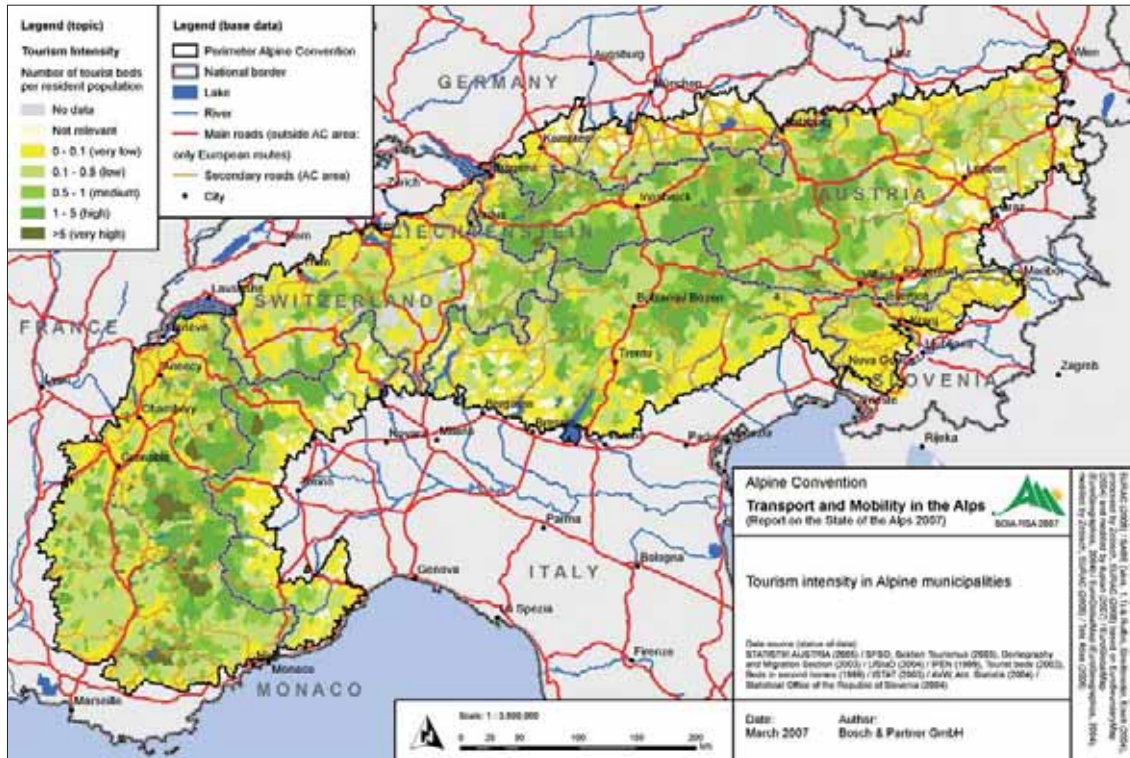
Therefore, the objectives underlying the joint development of centres and their surroundings are to enhance services for mountain areas and generally safeguard accessibility to services of general interest as well as the transfer of economic power. In order to reach these crucial objectives, legal, organizational, strategic, infrastructural and financial measures need to be implemented. Different approaches can be used to transfer know-how and economic power and ultimately secure attractive and manifold leisure offers for tourists but also for the local population. Combined offers allow users to increase their area of action. Often such offers are also «more comprehensive and understandable» as well as cheaper for users, hence increasing the quality of recreation.

Map 18: Development of labour market regions



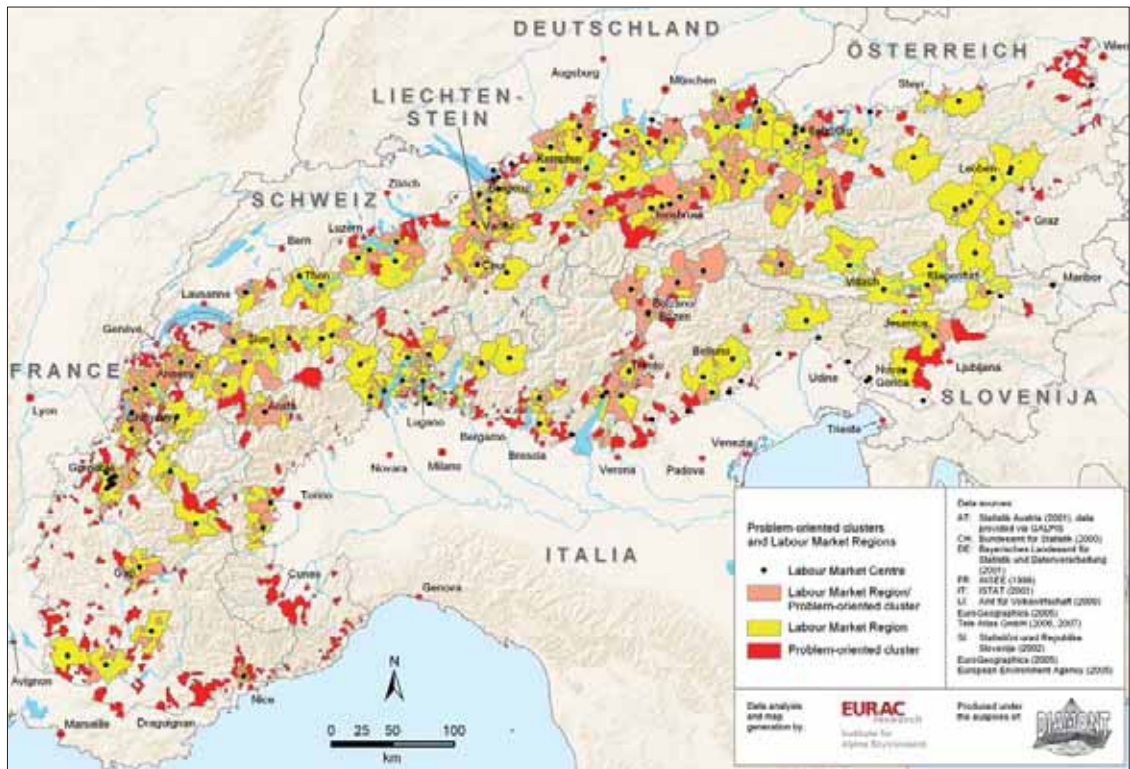
©TAPPEINER U., BORSDORF A., TASSER E. (eds) *Mapping the Alps*, Spektrum Akademischer Verlag; Heidelberg; 2008.
Labour Market Regions reflect the impact zones of municipalities or agglomerations on their hinterland municipalities;
the development of Labour Market Regions shows the dynamics of these areas within the Alpine territory between 1990 and 2000

Map 19: Tourism intensity in Alpine municipalities



Second report on the state of the Alps «Water and water management issues», Permanent Secretariat of the Alpine Convention; 2009.

Map 20: Land demand



©TAPPEINER U., BORSDORF A., TASSER E. (eds) Mapping the Alps, Spektrum Akademischer Verlag; Heidelberg; 2008. Aggregated feature based on population development, rate of young dependents, and road distance to the nearest core city

**Outcomes of the “Towns and rural areas in dialogue” seminar
October 2009, Bad Reichenhall (Germany)
Organized by Alliance in the Alps, the Alliance Alpine town of the year
and the Permanent Secretariat of the Alpine Convention**

The following statements summarize the results of the workshop and the presentations it included:

- Towns and their surrounding rural areas are complementary spaces, which, through cooperation, are able to create added value and new quality for both.
- To maximize cooperation between towns and rural areas there is already a broad array of instruments available.
- Legal structures bring stability and enhance the long-term achievement of goals.
- Special programmes and subsidies allow for additional impetus and added value.
- The connection of infrastructures is an important base for cooperation.
- Common projects and strategy development are necessary starting points for long-term cooperation and sustainable solutions.
- The tendency towards “regionality” stimulates cooperation between towns and their surroundings.
- Common educational projects play a key role in joint development.
- Planning areas have to be adapted in order to integrate both spaces into one common planning area (horizontal financial organization).

Possible examples of cooperation between centres and their surroundings are listed below:

- One example of a legal measure is the **Innsbruck Tourism agency** that brings together the 25 tourism agencies of the surrounding region into a larger association hence increasing the power and impact of their communication and marketing campaigns. Together they improve the attractiveness of the entire region by combining offers; with special impact on smaller communities.
- An organizational measure example is the **“Easttirol Card”**, which includes different leisure activities and transport offers in an all-inclusive package (museums, swimming pools, mountain railways etc.). It involves the town of Lienz and 32 communities.
- A strategic measure example is the **“Rheintal Vision”**. This establishes common spatial development in the Rhine valley by consolidating the spatial planning of the Land of Vorarlberg with the planning of the 29 communities in the Vorarlberg Rhine valley. The main objectives are to connect “free spaces”, to secure an overall spatial balance and, finally, to establish a compact region through synergy-driven connectivity.
- The **“Tyrolian Lech Nature Park”** uses subsidies to strengthen the management of the protected area, mainly for improving communication and tightening cooperation between all partners to create added value from tourism activities in the nature park.
- The **Vorarlberg region** has **harmonized its public transport system time-table** as well as introducing a single tariff system for the entire region, which includes 5 towns and 96 communities. This measure offers optimal connectivity and mobility for the rural and urban areas.
- Finally, various events are used to give impetus to both towns and their surrounding communities. One is the “Schubertiade”, which takes place in the town of Hohenems and involves the “Bregenzerwald” – a region with different offers for overnight and leisure activities.

The sustainability of cooperation between towns and their surroundings can be enhanced through networking, the structuring of various processes, the definition of strategic bases and long-term objectives, awareness building, support from key personalities, as well as through legal and organizational framework conditions.

Map 20 shows clusters of Alpine municipalities according to their potential drain on land resources based on major driving forces. Clusters exposed to problems are characterized by a below-average travel time to the nearest core city, above-average population dynamics and an above-average rate of young dependents.

“The Map clearly shows that municipalities subject to the highest spatial pressures are to be found mainly in the dynamically developing regions and development axes of the Alpine territory, i.e. the Isarco and Adige valleys, the Alpine rim areas around the upper Italian lakes, the Rhône valley from Annecy to Grenoble, northern Central Switzerland as well as the Rhine valley.” (Tappeiner, Borsdorf, Tasser, 2008).

The Alpine territory is a “living space undergoing change”. Creativity is required and is a quality that is admired and aspired to by the Alpine mountain people. Indeed, living with constant change calls for qualities such as spontaneity, intuition, imagination and aesthetics. It involves reaching beyond science and research.

The challenge is to use innovation and synergies to turn drawbacks, disadvantages, risks and vulnerabilities and the overall challenge of change into sustainable development. Solidarity, mountain resources, readiness to take risks, political will power, as well as embedded measures, are all important assets when formulating regional strategies (audit-processes). The ability to change one’s point of view and attitude is essential.

C.3 CLIMATE CHANGE AND ENERGY MANAGEMENT

The Alps are particularly sensitive to climate change. According to temperature measurements over the past centuries, warming in the Alps over the last century exceeded 1.5°C, which is more than twice the global warming average. By 2050 the temperature is expected to rise by a further 1°C to 3.5°C. This is likely to have a significant impact on the Alpine environment, which is sensitive, biologically rich and shows strong localized biodiversity in small areas.

It is obvious that a sensitive nature needs sensitive care and thus a specific and adapted strategy based on local and regional conditions. Such a strategy should cover the ecological, topographic, economic and social situations, the potential added value, the potential impact on nature and other potential conflicts.

In accordance with the climate and energy package of the European Union, greenhouse gas emissions should be reduced by up to 20% by 2020, compared with 1990. The share of renewable energies in total EU energy consumption should be increased to 20% while energy consumption should be reduced by 20% through increased energy efficiency by 2020.

Climate change and the different activities for mitigation and adaptation in the Alpine area can act as important drivers for sustainable rural development. This is especially true in the case where these activities are able to generate added economic value while at the same time protecting natural resources, furthering cultural identity and strengthening social integration. Initiatives undertaken by communities, towns or regions play a crucial role in triggering innovation and boosting employment in rural mountain areas. This is especially true when their aim is to become more energy self-sufficient or climate-neutral by increasing the use of renewable energies and improving energy efficiency as well as employing new concepts and strategies in tourism.

Alpine regions could set a good example by mainly using renewable energies to cover their

needs. Energy saving and energy management approaches in rural development mostly rely on local energy sources and have to be implemented primarily on the local or regional level.

Energy independence or even autarchy presents a number of advantages for the region. Not only does this reduce a region's dependency on external energy supplies, it also increases purchasing power in the region because local energy sources are used. With this comes a strengthened local economy and more jobs, through local investment and better control over energy prices. Furthermore, when a region overproduces, it can export and sell this additional energy. Decentralized energy generation is another characteristic of local renewable energy that shortens the distance between producer and consumer. This means that if the energy supply fails, the problems are easier to locate and the power restored more quickly than when there is only one central energy supplier. The regional added value generated by the installation and operation of renewable energy facilities offers promising development options. The creation of jobs and the independency from imported energy are further major benefits. Promoting the use of renewable energy sources by municipalities and countries is particularly beneficial for the small and medium-sized enterprises in the area concerned. However, this does not mean that the local communities do not benefit equally from

renewable energy production. Thus, the income from business tax and community-owned leasing can contribute to improving the local financial situation.

Owing to the technical advantages and disadvantages of different energy sources, it is clear that a one-sided extension of a specific renewable energy carrier cannot lead to a reliable and stable energy supply. This further underlines the importance of developing an Alpine-wide energy strategy. This may involve setting certain region-specific priorities in terms of energy sources. To prevent supply shortages from occurring, an Alpine-wide smart grid, possibly associated with virtual power plants, a cluster of distributed-generation installations that are collectively run by a central control entity (the concerted operational mode delivers extra benefits such as the ability to deliver peak-load electricity or load-following power at short notice), may be one way to achieve a balanced energy mix based on renewable Alpine energy sources. Regions might contribute to this effort according to their individual site conditions.

On the European and national level, expanding the use of renewable energies and implementing energy efficiency measures in conjunction with a more flexible energy market is often considered as the main approach to addressing the economic crisis.

Conclusion 8:

One of the most significant trends observed in the Alps is the polarization between marginalization and urbanization. As a result of structural change, younger people tend to move away, which means that the region is faced with ageing, depopulation and isolation (brain-drain).

To lessen demographic imbalances and polarization trends, which tend to undermine economic development, integrated strategies and better coordination of sectorial policies are required.

Conclusion 9:

In order to limit the brain-drain and facilitate job matching in rural areas,

- networking between cities and peripheral regions;
 - promotion of traditional mountain products;
 - collaboration between agriculture and other economic activities;
- should be encouraged.

Conclusion 10:

Towns and their surrounding rural areas are complementary spaces. Through cooperation they are able to create added value and improve their quality of life, especially through accessibility to services of general interest and a proper balance of economic power.

Conclusion 11:

Planning areas have to be adapted in order to integrate urban and surrounding rural spaces into one common planning area (horizontal financial organization).

Conclusion 12:

In the energy sector, the increasing interest in renewable energy sources and the current imperative for energy efficiency represent growing opportunities for sustainable rural development.

Conclusion 13:

Climate change and different activities for mitigation and adaptation in the Alpine area can act as important drivers for sustainable rural development.

In this context, initiatives undertaken by communities, towns or regions play a crucial role.

D STATE OF RURAL DEVELOPMENT: NATURAL AND HUMAN ASSETS IN THE ALPS AND ENERGY MANAGEMENT

D.1 THE ALPS: A TERRITORY KNOWN FOR ITS NATURAL RICHNESS

Taking into account the specific goals and context of this report, the mountain resources under investigation shall be divided into two main groups: natural resources and human assets. Of further importance is the distinction between renewable and non-renewable resources.

Although current knowledge about the mechanisms generally underpinning the dynamics of ecosystems is incomplete, the level of both environmental quality and ecosystem functioning appears to be generally high in mountain regions. Moreover, mountain ecosystems are among the richest in terms of biodiversity and several research initiatives focus on specific mountain “hotspots”.

Partial investigations have been made into some of the basic functions of mountain ecosystems in relation to lowlands. The goods and services they provide to lowlands have been classified as follows.

Recently, it has become possible to assign a monetary value to ecosystem services. This value reflects the flow of benefits provided by a certain use (or non-use) of land to households, com-

munities or economies. It also makes the service more visible. This information can be used by policy-makers to rectify market and policy failures, for instance by removing dysfunctional incentives such as subsidies, which sometimes contribute to environmental degradation, and by creating positive incentives (eventually linking payments to recognizable and valuable services) for achieving sustainable outcomes.

Whatever the Alpine region, the land available for economic use is proportionally less than in the lowlands. Without going into the detail of various types of land use, the land available for primary use is becoming smaller and smaller. Some land is not permanently lost but converted from agricultural and forest land into built-up areas, which is usually considered as a long-term transformation.

Although still highly questionable in absolute terms, the application of an economic approach to biological diversity, ecosystems and their sustainability, seems to be rather effective in raising public awareness about a number of formerly undisclosed aspects of ecosystems and the value of environmental resources.

To better understand the value of the natural goods and services provided by the mountains, it is necessary to look at the basic assets and

Table 2: Services provided by mountain areas to lowlands

Provisioning services	Regulating services	Cultural services	Supporting services
Freshwater, fresh air, timber, food, renewable energy supply, biodiversity.	Climate, water, air, erosion and natural hazards, carbon sequestration.	Recreation/tourism, aesthetic values, cultural and spiritual heritage.	Ecosystem functions, including energy and material flows, such as primary production, water and nutrient cycling, soil accumulation, and provision of habitats.

conditions in the Alps such as climate, biodiversity, natural resources or landscape.

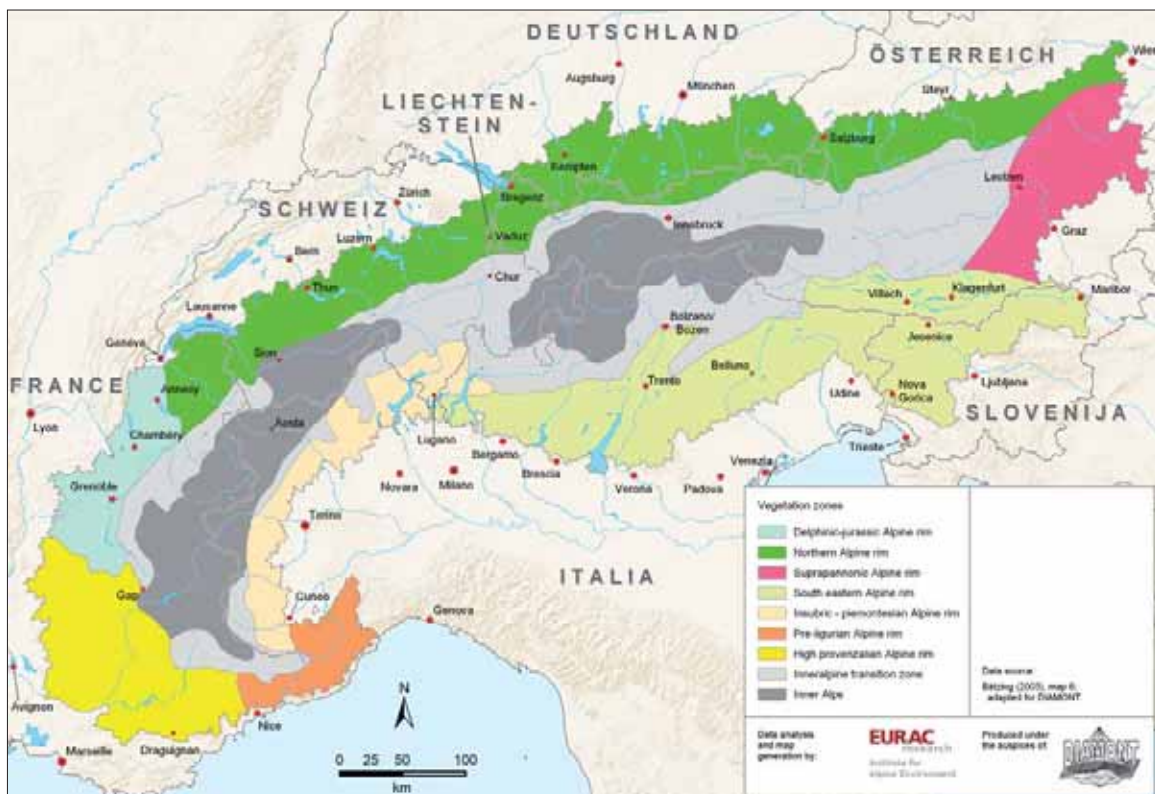
As the Alps serve as a barrier that forces the cloud systems to rise and discharge humidity in the form of rain or snow, the peri-Alpine zone is generally wetter. The internal areas, on the other hand, are less reachable by cloud systems and rainfall, and are thus normally subject to lighter rainfall and stronger sun on the south-facing slopes. These areas therefore have different environmental conditions and stronger variability in limited parts. Although conducive to human settlement, these conditions (mainly with regard to the glacial valleys), determine the greater complexity of the Alpine climate and the temperature ranges of the region (on a daily and annual basis and according to whether an area is sunny or shady).

Considering the Alpine climate, some authors have even stated that “each valley has its own

climate”. Combined with a complex geomorphology, these microclimates contribute to a large variety of habitats and high levels of biodiversity. The Alps are a centre of biodiversity for the whole of Europe. Today, the Alpine landscape is significantly marked by natural, semi-natural and artificial environments as well as by traditional land uses. This variety of land cover, as well as changes in society, tourism, and agricultural production methods, has fostered a rich form of biodiversity in the smaller parts of the Alps. The Alpine territory has about 900 large protected areas (with a surface area of over 100 hectares), which cover roughly 25% of the Alpine convention area.

Although in many cases shaped by human forces, the Alpine landscapes differ greatly from those existing outside the mountain area. The interaction between various natural, political, social and cultural forces has created distinctive forms of landscape, which exert a powerful attraction on visitors and have a strong Alpine character.

Map 21: Vegetation zones



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The Alps have a crucial function in supplying water to the lowlands. This can vary from 35% (in the case of the Danube) to as much as 80% (in the case of the Po) of the overall discharge in the different catchments of the Alpine region, with the latter figure corresponding to peak periods. The substantial contribution of the Alps to the total discharge of the 4 main Alpine river basins always needs to be taken into consideration when addressing water management issues.

D.2 CHARACTERISTICS OF HUMAN ASSETS

The Alpine Convention area comprises approximately 190,600 km², which included almost 6,000 municipalities in 2007. The same year, about 14 million people lived in this area. Today, the population living in the area covered by the Alpine Convention has doubled compared with the end of the 19th century. Topography plays a key role in analyzing the reasons for the

observed population density pattern in mountainous regions. Many parts of the Alps must be considered as unsuitable for human settlement. On average, about 17% of the area identified under the Alpine Convention can be considered as appropriate for permanent settlement.

Human assets are generally considered to indirectly produce economic value. They have been developed over time and can be seen to represent the heritage of a given territory. Often the human factor, interpreted as a variable in the development process of a given territory, is a vital and essential asset since it is one of the major «driving forces» of society. Over the last century, the difficulty providing cultural services, recreational possibilities, health and social benefits, as well as economic opportunities (mainly credit and employment), was the major factor limiting the quality of life in mountain areas. Indeed, it had a significant impact on the depopulation trend.

However, the mountains offer a wealth of traditions, habits and activities and these have

Table 3: Overview of municipality types and the population structure

(availability of the reference year varies between 1987 and 2004)

Population classes ¹	Number of municipalities	Share on total number of municipalities [%]	Number of inhabitants ¹	Share on total population [%]	Number of municipalities with decreasing inhabitants during the 1990s ²	Share of municipalities with decreasing inhabitants during the 1990s ² on relative municipalities of population class [%]
1	2	3	4	5	6	7
< 500	1,876	31.5	445,588	3.2	684	36.5
500 – < 1,000	1,099	18.5	797,585	5.7	309	28.2
1,000 – < 2,500	1,572	26.4	2,551,301	18.2	419	26.5
2,500 – < 5,000	816	13.7	2,810,900	20.1	168	20.5
5,000 – < 10,000	367	6.2	2,476,149	17.7	67	18.6
10,000 – < 25,000	175	2.9	2,522,397	18.0	42	23.6
25,000 – < 50,000	35	0.6	1,166,367	8.3	13	38.2
≥ 50,000	14	0.2	1,228,738	8.8	5	35.7
Total Alps	5,954	100.0	13,989,025	100.0	1,707	28.7

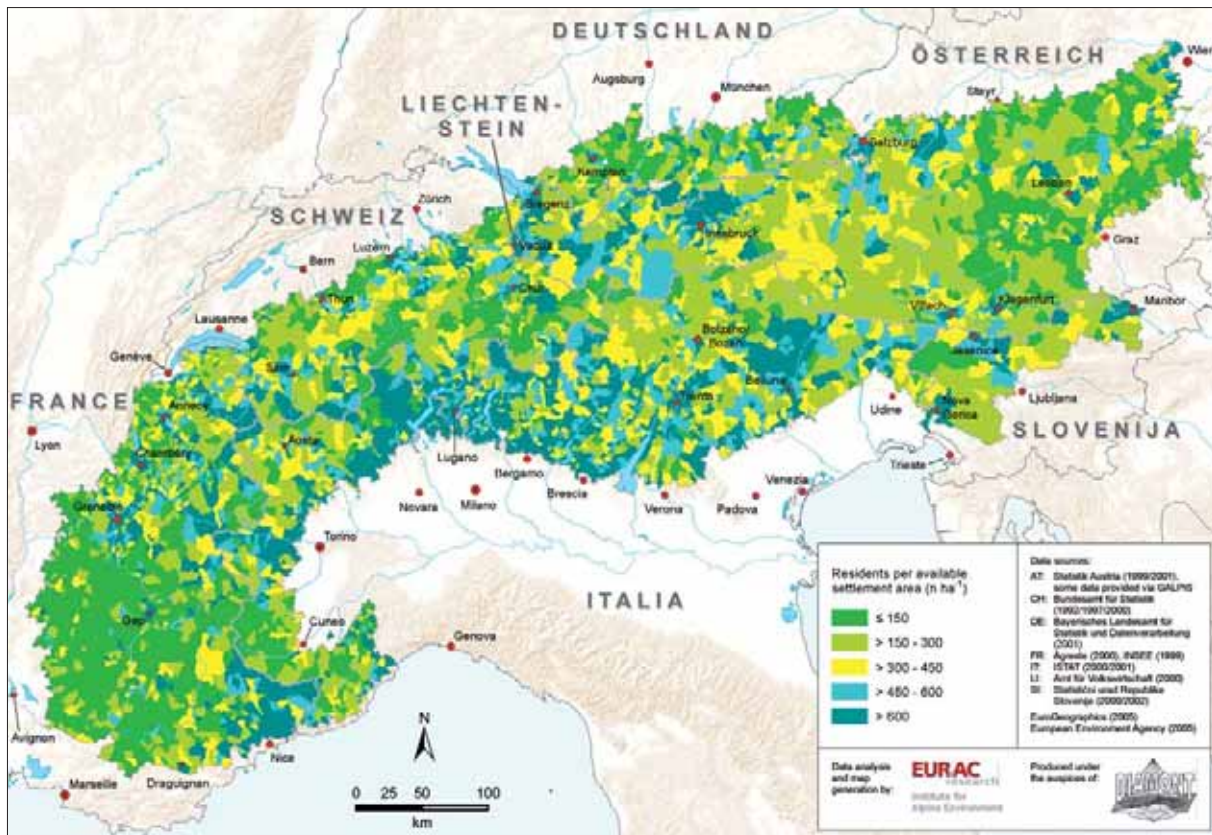
Source: AT (UBA), FR (IFEN), DE (LfStaD), IT (ISTAT), LI (AVW), SI (Statistical Office of the Republic of Slovenia), CH (FSO)].

¹⁾ Date of survey: AT: 2005, DE, IT, LI, SI and CH: 2004, MC: 2000, FR: 1999. Does not include the ten German municipality-free areas.

²⁾ Due to data availability the reference year varies between 1987 and 2001: MC: 1990/2000, AT: 1991/2001, FR: 1990/1999, DE: 1987/2000, IT: 1990/2000, LI: 1990/2000, SI: 1991/2000, CH: 1990/2000.

Source: First Report on the State of the Alps, Transport and mobility in the Alps.

Map 22: Population density per available settlement area



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gradually been adapted to the Alpine environment and are reflected in Alpine crafts, agricultural products, languages, etc.

Given the specific characteristics of the Alpine area, local training and research centres should train specialists in subjects that are close to local reality and needs, so that the solutions developed are appropriate for mountain areas. Research should contribute to stimulating technological development in local enterprises.

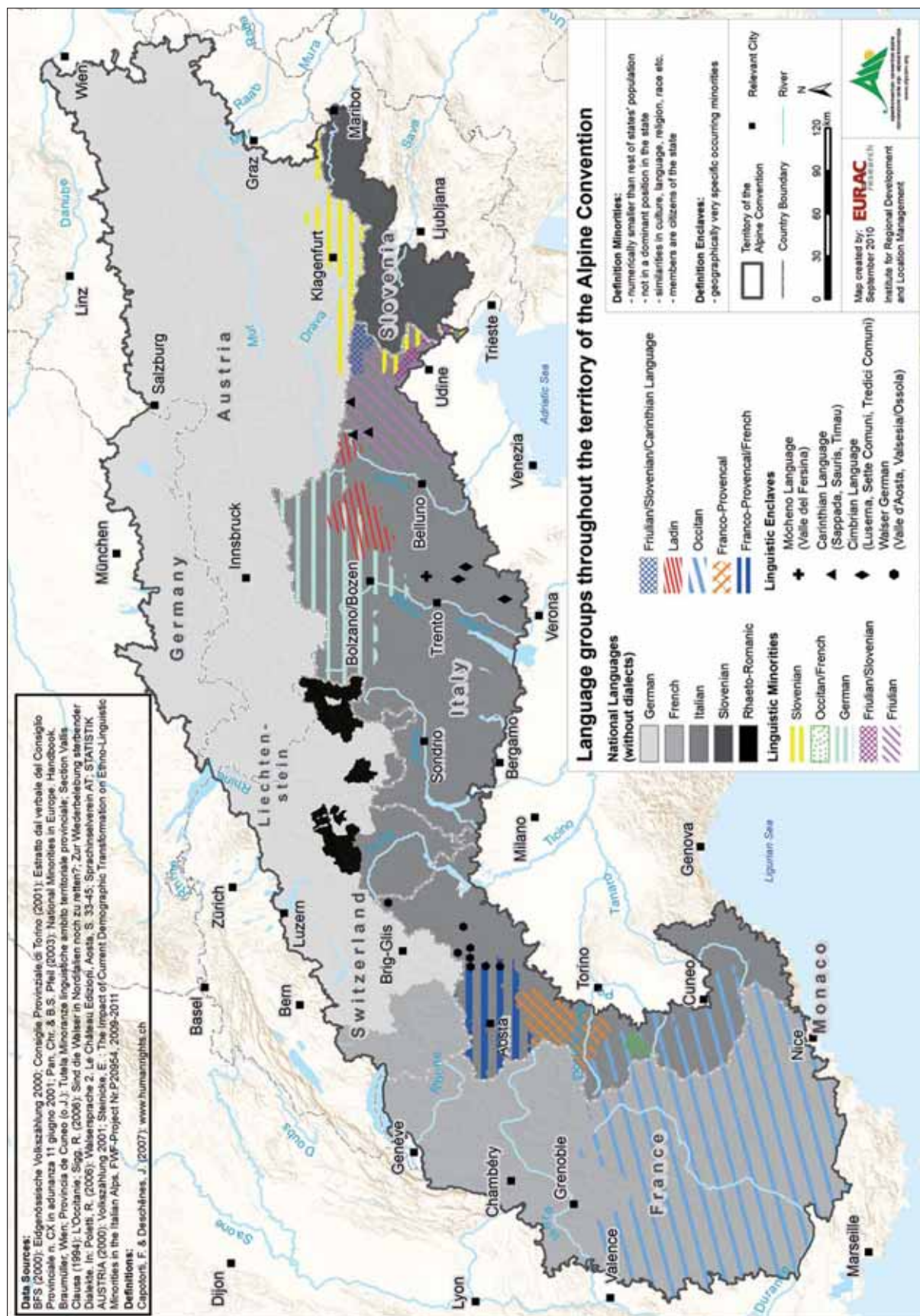
A more Alpine focus on research and education would improve the availability of specialists linked to their own territory and generate the added value of maintaining technicians in the Alpine area.

Underlying the statistics pointing to a declining or growing number of inhabitants, or to the structural ageing of the Alpine population, compositional changes can be found. Indeed, many

upland communities are experiencing an influx of new inhabitants, generally younger than the majority of the local population. Most of these “immigrants” are from the lower reaches of the Alps or indeed from the cities in the plains, although quite often they are also from afar (Dislivelli).

Although studies are still few and far between, there seems to be evidence that quite often these «new highlanders» are those who are most active in finding ways to revamp local economies. Somewhat paradoxically, these newcomers may also be those who are keenest to defend and revitalize local traditions and cultures and to promote a revival of local craftsmanship as part of a more general attempt to preserve cultural heritage and strengthen local identities. Quite often they are, in a word, those who try to devise and promote «Good practices» in an outside-in approach, in which tradition can blend with creativity.

Map 23: Language groups throughout the territory of the Alpine Convention



D.3 ENERGY MANAGEMENT IN THE ALPS

As mentioned in the introduction, and as decided by the Evian Ministerial Conference in 2009, one of the main focuses of the current report is the role of energy resources and energy management in rural Alpine areas. In this context, innovation and climate change can actually trigger the development of renewable energies based on natural resources while at the same time respecting their limits.

The Energy protocol of the Alpine Convention states that the “Contracting Parties shall commit themselves to creating framework conditions and adopting measures for energy saving, production, transport, distribution and utilization within the territorial scope of the Alpine Convention in order to establish sustainable development in the energy sector compatible with the Alpine region’s specific tolerance limits” (Art. 1). In doing so, the Contracting Parties will provide an important contribution to protecting local communities and the environment and to safeguarding resources and the climate.

Nevertheless, it is currently not possible to establish a clear picture of the energy sector situation in the Alps as data availability differs from one Alpine Convention country to another and comparability is not possible. Outlooks are based on national calculations and data, which are not harmonized for the Alpine area. Thus, there are currently no common calculation methods

and it is impossible to compare different parts of the Alpine territory. It should also be taken into account that some regions or municipalities are currently striving towards energy autarchy while others have already reached this goal. On a national level, there are also few studies that systematically examine the regional added value generated by the installation and operation of renewable energies. It would be very useful to develop a harmonized calculation basis for the Alpine regions. A sound and reliable calculation method would further strengthen the Alpine territory, helping it to expand its share of renewable energy on a local level and show the expected added value on a local or regional level. Such a method should also take into account the negative impacts of local energy production on landscapes and ecosystems.

The Alpine countries support the development of renewable energies with a variety of measures and funding programmes. The goal is to significantly increase the share of renewable energy in the total amount of energy produced. Structurally weak rural areas could benefit from this development under certain conditions, as already demonstrated by a number of examples in Alpine regions. With sufficient available resources and opportunities to use these for energy production, municipalities would be able to become energy-independent while reaping in other positive economic effects: the creation of jobs and income and a positive image of the community or region through its individual contribution to climate change mitigation.

Conclusion 14:

As topography plays a key role in the population density pattern of mountainous regions, most of the Alps (around 80%) are unsuitable for permanent human settlement. However, some valleys have reached population densities similar to those in densely populated urban centers.

Conclusion 15:

Compositional change in upland communities of the Alps is a largely novel, and still under-researched, socio-demographic phenomenon. Thus, little is known about how this might vary in different parts of the Alps, what its entrepreneurial potential might be or the relations it entails between “old” and “new” highlanders. The impression is that there has been an increasing amount of compositional change, possibly at an accelerated pace, over the past few years. This phenomenon is still an unknown factor, but one which is likely to play an important role in Alpine rural development.

Conclusion 16:

Owing to its nature (slopes, force of gravity) and natural resources (wide availability of water and biomass, high sunshine periods), the Alpine territory offers very good conditions for generating renewable energies.

Conclusion 17:

In order to contribute to energy saving and sustainable generation of renewable energy in the Alps, regional strengths and opportunities should be identified on the basis of relevant and harmonized data.

E STRATEGIES FOR RURAL DEVELOPMENT

Several protocols of the Alpine Convention include aspects and visions for strategies of a future mountain area. For example, Art. 7 of the mountain Farming protocol states that the “contribution which mountain farming makes to the conservation and maintenance of nature and the countryside and to the prevention of natural risks, in the general interest, shall give rise to appropriate compensation, in the framework of contractual agreements linked to identified projects and services going beyond the general obligations.”

Concepts of sustainable rural development include fostering regional centres (grouping together the main services of general interest), increasing urban-rural cooperation, raising the female employment rate and quality of life and supporting services of general interest. Use of the capacities and expertise of Universities and other knowledge centres in the development of Alpine rural areas should be optimized in order to bridge the gap between knowledge (mostly in urban regions) and enterprises, stakeholders and populations in rural areas.

Innovation, or in other words “the successful production, assimilation and exploitation of novelty in the economic and social spheres” (COM(1995) 688), plays a crucial role in improving the competitiveness and attractiveness of rural territories in the Alps. The LEADER initiative (Axis 4 of the European Agricultural Fund for Rural Development) supports comprehensive, innovative and partnership-oriented approaches to strengthen self-defined development in rural areas. It aims to help actors to consider the long-term potential of their local region and encourages the implementation of integrated, high-quality and original strategies for sustainable development. It also has a strong focus on partnership and networks of exchange of experience.

Given the quantitative and qualitative evolution of needs and the increasing urban concentra-

tion of services, rural areas must be innovative and organize collective alternatives, while at the same time maintaining a cross-cutting approach. Today, it does not seem appropriate to develop services individually owing to their high costs. A global approach based on the pooling of services seems preferable to a thematic approach.

The INTERREG Alpine-Space-projects PUSEMOR (2005-2007) and ACCESS (2008-2011) conclude that services of general interest should not only be looked at in terms of infrastructure alone, but also in terms of the use of those infrastructures. Rural policies should encourage the use of those services. Combining different services and improving the accessibility of Services of General Interest in the sense of time could be an important step towards its better use.

The Good practices gathered together from different parts of the Alps highlight a recurring fact: cooperation and networks are crucial for innovation and sustainable development. This applies to municipalities (Haute-Sorne micro-region), women (Lungau women’s network), different tourism regions (Alpine pearls), cities (CAPACities), expert networks (Bregenzerwald Cheese street), networks for organic production and sale of organic products or large trade chains (hay making region of the Trumer Seenland, etc.) and networks for developing social capital at a local level (activities of societies and associations in Slovenian Alpine municipalities). With respect to Small and Medium-sized Enterprises (SMEs), clusters offer a range of advantages. These new organizational forms contribute to the integration of new skills for the design, production and sale of highly complex products. Sharing, cross-disciplinary work and network proximity can be reliable alternatives to the dominant logic of concentration and specialization, and can provide better overall quality by modernizing services of general interest.

Although apparently able to slow down the process of polarization between marginalization

and urbanization, subsidies are not a viable solution to completely turn around this trend. Only complex action can help to maintain remote regions alive. Strategies used to make small remote municipalities more vital and dynamic include: networking of small cities and remote regions to strengthen cooperation in political, economic and cultural sectors, promoting traditional mountain products through regional marketing initiatives, ensuring closer collaboration between agriculture and other economic activities, and establishing a platform to facilitate job matching and encourage skilled workers or professionals to stay put and hence limit the brain drain. The ARGE ALP "Brain Drain" project revealed that most highly-qualified emigrants are highly attached to their homeland, which is a good basis for action. One way to bind people to their homeland, either physically, financially or mentally, is to create networks of emigrants in the place where they live, as well as internationally, in order to provide them with constant information about their homeland. This might encourage them to integrate their knowledge in home-bound processes, to invest in their homeland or to simply act as a contact point for enterprises and individuals from their homeland wishing to expand their economic, cultural or other activities. In order to be attractive to locals, but also to foreign "brains", it is important for a place to maintain its image, to establish interesting work places and to set up a framework for social cohesion, by providing services of general interest for example.

Concerning the methodology for establishing a strategy for sustainable rural development in the Alps, rural development and planning should be considered as processes rather than the result of an expert's work, which then has to be adapted so that it can be properly understood by Alpine citizens. Final implementation decisions should then be taken by the appropriate authorities (balanced governance).

As we have seen in the previous chapters, climate change and energy management play a crucial role for sustainable Alpine development.

They must therefore be an integral part of the response to development challenges in the Alps. It is also important to think about energy efficiency and the use of renewable energies when drawing up strategies.

The reduction of energy use in the Alpine area is a first step to achieve saving of greenhouse gases needed to mitigate global warming. Fulfilling the technical potential for more efficient energy use is not sufficient and must be reinforced by macro-economic measures leading to energy saving.

A cooperative and Alpine-wide energy initiative would help contribute to the systematic strengthening of rural areas, in particular the very peripheral areas of the Alps. In this context, it appears to be even more important to develop an Alpine-wide energy strategy. To avoid a supply shortage, an Alpine-wide smart grid, possibly combined with so-called virtual power plants, could be one way to achieve a balanced energy mix based on renewable energy sources in the Alps. Regions could contribute to this effort according to their individual site conditions (in terms of natural resources, vulnerability, conflicts, acceptance, etc.), and by cooperating with each other. The energy policy of the Alpine states strives for a higher share of renewable energies, the aim being to increase it from 9% to 20% of the total energy balance by 2020. Biomass, geothermal energy and solar energy have a considerable amount of potential in the Alpine territory. Moreover, these are energies that can be used very close to their production site. The growth potential of hydropower is marginal. Action to improve the efficiency of existing facilities and ensure better ecological integration seems to be more reasonable than developing new plants without any prior careful planning.

A higher rate of energy self-supply has many advantages for the region. It does not only reduce a region's dependency on external suppliers, it also increases the region's purchasing power. Indeed, because local energy sources are used, and local investments, the local economy is strength-

ened and the region becomes more attractive as a place to work. It also allows for better control over energy prices and the possibility of exporting and making money from the sale of energy in the case of overproduction. Decentralized energy generation is another characteristic of local renewable energy and one which shortens the distance between producer and consumer, with all the benefits this offers.

Possible priority fields for such a strategy could be services of general interest, vertical and horizontal networks and clusters in agriculture, forestry and tourism, cooperation and networks for human assets in the Alps and, finally, SMEs and innovation. The Alpine Convention could provide the platform for such a process and policy development geared towards the "Alps" region.

F MAIN CHALLENGES FOR RURAL DEVELOPMENT

The main challenges outlined by the working group tend to be of an operational nature and might form the basis for future political action in the Alpine area and hence contribute to maintaining attractive living conditions in these territories.

The group recommends taking into account the specific characteristics of the Alpine mountain regions. This does not mean that public policy should be thought of in terms of offsetting Alpine handicaps (including the natural handicap of the mountains), but rather in terms of developing the strengths of the Alpine mountains by capitalizing on the value of the services provided by their resources and allowing the assets of Alpine inhabitants to be shared by all citizens.

The group suggests organizing the main challenges by focusing on six major and mostly cross-cutting issues:

1. Coordination of public policies in the Alpine area and emergence of new types of territorial governance.
2. Improvement of the functional relationship between mountain areas and urban centres in the Alpine valleys and at the Alpine fringe.
3. Mobilization of research for innovation in the Alps and for issues of mountain areas in general.
4. Reinforcement of economic activities specific to the Alps (by exploiting the territory's richness to generate profit and hence maintain and create new jobs).
5. Networking around the sustainable development experiences in the Alps.
6. Promotion of energy saving and use of renewable energies

F.1 COORDINATION OF PUBLIC POLICIES IN THE ALPINE AREA AND EMERGENCE OF NEW TYPES OF TERRITORIAL GOVERNANCE

The challenges facing the Alps outlined in this report can act as drivers for an integrated approach to rural development. The aim is to coordinate all policies so that they focus on what is vital for sustainable rural development. Bottom-up governance involving various population groups is a basic principle and one which would allow us to successfully implement integrated approaches both generally and specifically, at the local and regional levels.

As we have seen, the Alpine territory has undergone a certain amount of demographic changes. The issue of adapting to climate change has emerged as a core task. The different policies and the transverse development measures of the Alpine area need to be coordinated to take this into account. The working group suggests that policy makers adopt a macro-regional approach to the Alpine territory. This will help strengthen the coordination of national and European tools,

Main challenge 1:

The Alpine Convention needs to contribute to discussions about a macro-regional approach and other forms of territorial governance for the Alpine territory. In this context, regional authorities could be more involved and generate greater added value.

Main challenge 2:

Ways to mitigate and adapt to climate change in the Alpine area need to be identified as these can fuel sustainable rural development especially by encouraging the initiatives of communities, towns or regions.

which may in turn contribute to the adaptation of the Alpine economy to the already-perceptible consequences of global warming.

In this context, the members of the working group note that the creation of public policy targeting Alpine territories is undermined by a lack of statistical information about the territory of the Alpine Convention.

Main challenge 3:

Dialogue between the responsible institutions of the Alpine Convention, and national and the community-level statistical institutions needs to be improved so that the perimeter of the Alpine Convention is taken into account in the development of statistical aggregates.

F.2 IMPROVEMENT OF THE FUNCTIONAL RELATIONSHIP BETWEEN MOUNTAIN AREAS AND URBAN CENTRES

The members of the working group stress that the spatial dynamics of the Alps are closely related to their relationship with neighbouring cities and their surroundings (whether or not these fall within the perimeter of the Alpine Convention). Indeed, these spatial dynamics are among the most powerful on the continent.

They attract the attention of policy makers with respect to the following points:

- The volume of daily commuter and leisure-related traffic between cities and rural areas in mountains, and the need for solidarity between the local authorities involved. It is important that local authority resources are in-

vested also beyond the economic activity of the territory concerned.

- Some Alpine territories are dominated by a residential economy. The group emphasizes the need to structure and accompany other sectors of the economy to prevent spaces from emerging whose sole function is to act as bedroom or secondary home areas.
- The group notes that a considerable share of the innovation potential, which complements the innovation created within the Alps, is located in major cities near the Alps (whether or not these fall within the perimeter of the Alpine Convention).

Main challenge 4:

An approach involving both urban and rural areas in thinking about how to ensure a balanced development of the rural Alpine area is needed.

Main challenge 5:

Pilot regions able to set up cooperation between centres and rural surroundings in order to develop specific programmes to improve their functional relationship need to be identified and motivated.

F.3 MOBILIZATION OF RESEARCH FOR INNOVATION IN MOUNTAIN AREAS

The members of the group consider that the ability of Alpine territories to generate sustainable development for themselves depends on their ability to mobilize researchers and enhance knowledge exchange in order to promote innovation in the territories of the Alps.

They therefore recommend:

- encouraging research to focus on specific or major topics for these territories such as how to capitalize on ecosystem services, diversify the tourist economy, create social innovation and manage natural hazards, etc.
- attracting qualified staff from Alpine regions to become involved, taking into account that such individuals usually maintain strong links with their homeland and its surroundings.

Main challenge 6:

Existing research frameworks in mountain areas need to be identified, enhanced and put to good use.

Main challenge 7:

Specific tools to promote a policy of innovation integrating the specific characteristics of the Alps and based on the examples of good practices outlined in the report need to be identified.

Main challenge 8:

The value of Alpine assets and ecosystem services need to be considered as a basis for better safeguarding the fragile mountain environment.

F.4 REINFORCEMENT OF ECONOMIC ACTIVITIES SPECIFIC TO THE ALPS

Overall, the group recommends that policymakers should take into account the specific challenges, changes and strengths of the Alpine mountain areas when drawing up major public policy (common agricultural policy, cohesion policy, transport policy, etc.). Taking Alpine specifics into account would make it possible to capitalize on the value of the diverse range of natural resources and human assets that can be found in Alpine mountain areas. These areas should not be seen in terms of offsetting their handicaps but in terms of exploiting their natural assets in order to generate profit.

The working group emphasizes the following points:

- Concerning agriculture: in order to counter the trend of agricultural abandonment and depopulation in remote areas, the competitiveness of farmers has to be maintained or re-established by sustaining a multifunctional type of agriculture through adequate subsidies as well as marketing agricultural products through designations of origin.
- Concerning the role of forests in mountain areas: public policies should be developed to enhance the multifunctional role of mountain forests (protection against natural hazards, beauty of the landscape and attractiveness for tourism, production of wood as a building material or fuel, etc.).
- Concerning the production of energy: the production of renewable energies needs to be supported by ensuring that territories have a share in the wealth produced. It is also important to choose energy sources that are adapted to different territorial specifics.
- Concerning the industrial sector: the transformation process needs to be supported and the creation of new enterprises encouraged. The use of ICT's can help to develop new market potential and to bridge physical distances.
- Concerning tourism: the tourism sector needs to be more competitive, particularly in view of its ability to adapt to climate change.
- Concerning ecosystem services: different payment models need to be investigated.

Main challenge 9:

Programmes and financing need to be promoted and identified so that successful experiences can serve others and the impact of innovation can be assessed.

F.5 NETWORKING AROUND SUSTAINABLE DEVELOPMENT EXPERIENCES IN THE ALPS

Finally, the group emphasizes the importance of encouraging policies to promote bottom-up approaches and local initiatives. The Alpine

Convention will encourage the participation of Alpine stakeholders and Alpine activity networks.

Main challenge 10:

Implementation of institutional and financial means as well as necessary competences with the objective of transforming successful experiences into development policies.

F.6 PROMOTION OF ENERGY SAVING AND THE USE OF RENEWABLE ENERGIES

Alpine regions can make an important contribution to the achievement of the EU's 20-20-20 targets by becoming as energy efficient as possible and promoting renewable energies.

The Alpine regions have many natural resources. This means that they can considerably help to lower CO₂ production and reduce the dependence of European regions on countries that produce fossil fuels.

The Alpine forests have a substantial amount of energy-efficient building material while energy-efficient building construction has long been a tradition. As making energy savings is by far the cleanest and most available way to reduce greenhouse gas emissions, the working group suggests primarily focusing on the promotion of energy saving.

However, there is also a significant potential for the production of renewable energies (hydro-power, biomass, solar energy, wind power and ground heating). While this is to be supported, its potential negative effects on the environment should also be taken into account. A sound knowledge of all the impacts of renewable energy production – positive as well as negative – is needed in order to hold objective discussions.

Thus, energy saving measures and the use of renewable energies should both be encouraged. The group supports improving the profitability of energy production and the new economic potential this could offer Alpine communities.

Main challenge 11:

The development of regional energy concepts as a basis for promoting renewable energy production and higher energy efficiency in construction must be supported.

Main challenge 12:

Data and know-how in energy saving and renewable energy generation must be collected.

Main challenge 13:

Energy saving and energy efficiency should take priority in the generation of more energy.

Main challenge 14:

The potential of and risks underlying renewable energies on local and regional levels in the Alpine area need to be systematically analyzed.

The positive and negative impacts of the different types of renewable energies, specific to the Alpine regions and their framework conditions, need to be assessed.

BIBLIOGRAPHY

Alpine Convention; Transport and mobility in the Alps, Report on the state of the Alps; 2007.

Dax T.; The role of mountain regions in territorial cohesion, a contribution to the discussion on the Green Paper on Territorial Cohesion, commissioned by Euromontana, Bruxelles; 57 pp; 2008.

EEA; Integrated assessment of Europe's mountain areas, EEA report; 2010.

Errington, A.; Elaborare strumenti per lo sviluppo rurale: un'agenda di ricerche multidisciplinari. In A. Arzeni, R. Esposti & F. Sotte (Eds.); Politiche di sviluppo rurale tra programmazione e valutazione (pp. 91-113); Milano: Franco Angeli; 2003.

Tappeiner U., Borsdorf A., Tasser E.; Mapping the Alps, Spektrum Akademischer Verlag, Heidelberg; 2008.

Zanolla G., Ruffini F. & Streifeneder T.; Demographic dynamics in the Alpine arch: trends and future developments with special focus on Italy; International conference on Regional and Urban Modeling; Brussels; 2007.

WEB PAGES

www.alpconv.org

www.alpine-space.eu

www.argealp.org

www.berggebiete.eu/cms/dmdocuments/laendliche_entwicklung/artikel_dax_machold_meisinger_rdp_rural-youth.pdf

www.dislivelli.eu

enrd.ec.europa.eu/rural-development-policy/leader/en/leader_home_en.cfm

www.ec.europa.eu/regional_policy/atlas2007/transnational/index_en.htm

www.ec.europa.eu/regional_policy/images/map/cooperat2007/transnational/transnat_mosaic.pdf

www.iscar-alpineresearch.org

www.mtnforum.org/rs/ol/browse.cfm?tp=vd&docid=4877

www.oecd.org/document/7/0,3746,en_2649_33735_37015431_1_1_1_1,00.html

www.reg-observatory.org

www.rim-europa.eu

www.uibk.ac.at/diamont

APPENDIX

List of Good practices presented in the long version of the report (available on www.alpconv.org)

- Good practice 1:** Activity of societies and associations as a criterion of development of social capital at a local level, Slovenia
- Good practice 2:** Process innovation for sustainable planning, Italy
- Good practice 3:** The social concept Ausserfern, Austria: encouraging regional social cooperation for improving life quality
- Good practice 4:** The Ark: promoting innovation in the Valais, Switzerland
- Good practice 5:** Social innovation in Austria: Women's network Lungau: non-party network of women for women
- Good practice 6:** Pilot project for cooperation between municipalities: Micro-région of Haute-Sorne, Switzerland
- Good practice 7:** Service innovation in support of tourism in the Alps
- Good practice 8:** Alpine pearls; international project
- Good practice 9:** Pilot projects: «mobiles Entlebuch»: developing soft mobilities in the UNESCO Biosphere Entlebuch, Switzerland
- Good practice 10:** Biosphere Park Grosses Walsertal, Austria
- Good practice 11:** Bregenzerwald cheesestreet, Austria
- Good practice 12:** Development program Soča 2002-2006 and 2007-2013, Slovenia
- Good practice 13:** Service integration, Liechtenstein
- Good practice 14:** inoVagri: Promoting innovation in agriculture, Switzerland
- Good practice 15:** The organic hay making region of the Trumer Seenland, Austria
- Good practice 16:** Organic farming of Eco-village in Čadrg, Slovenia
- Good practice 17:** Nature park Almenland Teichalm Sommeralm, Austria
- Good practice 18:** Purification by vermicomposting in Alpine Cheese Factory, France
- Good practice 19:** Chilometro zero project, Italy
- Good practice 20:** The case of SuperAlp! 4, a sustainable voyage in search of the Alpine food and wine cultures, international project
- Good practice 21:** The center of competitiveness: ARVE Industries, international project
- Good practice 22:** Micro Center Central Switzerland (MCCS)
- Good practice 23:** The scheme of services of the «Pays Sisteronais Buëch», France
- Good practice 24:** Village service in Upper Carinthia, Austria
- Good practice 25:** The mobile library BIBLIOBUS, Slovenia
- Good practice 26:** Social care for the integration of mentally disabled people in Municipality of Črna, Slovenia
- Good practice 27:** Research program «My featured space», Alpe Adria Region
- Good practice 28:** Vision Rheintal: 29 municipalities - one living space, Austria
- Good practice 29:** Agglomeration Werdenberg-Liechtenstein Association Switzerland and Liechtenstein
- Good practice 30:** protection and promotion of mountain vineyards and mountain wines' production: the cases of CERVIM and UNCEM, Italy
- Good practice 31:** Adaptive management strategies of the Austrian Federal Forests, Austria
- Good practice 32:** INTERREG projects in the field of forestry, Germany
- Good practice 33:** Development of an approach for constructing wood: the certification «Bois des Alpes» («Alpin Woods»), France
- Good practice 34:** Good practices in sustainable mobility, Italy
- Good practice 35:** Economic cycles and rural development in Europe, with special reference to the Alpine sites
- Good practice 36:** Payments to farmers for quality tap water in the city of Munich, Germany
- Good practice 37:** Specialization in Wine-Production in Goriška Brda, Slovenia
- Good practice 38:** Towns and lands of art and history, France
- Good practice 39:** The case of the Italian Fund for the Environment's «Heart's Places», Italy
- Good practice 40:** Landscape management in the spatial development strategy of Slovenia
- Good practice 41:** Walk of peace in the Soča region foundation, Slovenia
- Good practice 42:** The Glentleiten Open Air Museum in Upper-Bavaria, Germany
- Good practice 43:** Education excellence for mountain assets' management in the Alps, in Germany and Italy
- Good practice 44:** Social dimension and economic performance in Austria
- Good practice 45:** The SHARE Project, international project
- Good practice 46:** Wildpoldsried in 2009, Germany
- Good practice 47:** Program e5 for efficient energy usage in municipalities, Austria
- Good practice 48:** Bioenergy region Goms 2030; Project «Gleichstrom» 2007 - 2010, Switzerland
- Good practice 49:** Steam piping project between the Swiss Waste
- Good practice 50:** The Swiss Innovation Promotion Agency CTI, Switzerland

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