

Recommendations for climate change, environmental protection and natural hazards

The Alps are more strongly affected by climate change than any other region in Europe, and recent warming has been roughly three times the global average (Climate Change in ... 2007). In the Alpine area, the availability of space suitable for permanent settlement and economic activities is limited, and the land demand for other types of uses is increasing. The effects of climate change exacerbate the problem, extending the number and relevance of hazard zones as well as the need for land for protection measures in connected areas. As a consequence, land is becoming increasingly scarce as a resource for settlements in almost all the Alpine regions.

Climate change adaptation is therefore becoming relevant for Alpine spatial planning and development. A European Commission white paper explicitly stresses the necessity of a long-term and strategic approach to spatial planning in order to reduce vulnerability to the impact of climate change (Climate Adaptation Policies ... 2012). Spatial planning can thus be considered a “consistent, effective and influential means to prevent and respond to the consequences of climate change on the alpine territory” (Transnational Strategy ... 2011). According to the green paper “Adapting to Climate Change in Europe – Options for EU Action” from the European Commission, “spatial planning is a cross-sectorial issue, which makes it a suitable tool to define cost-effective adaptation measures.” This means that policies and strategies for adapting to climate change should become a prioritized field of action of spatial planning.

Adaptation to climate change is strictly connected with environmental protection and natural hazard management, and this creates a general situation of high complexity with a high level of uncertainty. An unsuitable or inadequate adaptation strategy can worsen the situation, and for this reason spatial planning must become the convergence point of various contributions coming from specialized approaches.

Recommendations to policy makers and civil servants

Climate change

- **Integrate climate change adaptation into planning practices**

In order to address the impacts of climate change, an adaptation strategy has to be developed and embedded in spatial planning at the regional, national, and local levels. Despite several examples and attempts, at the Alpine Space Programme level it is still impossible to find a solid methodology that can be applied to different territorial situations. Even the economy is a sensitive criterion that should be taken into account because the availability of financial resources is a critical factor in supporting activity countering the negative effects of climate change.

- **Foster cooperation among administration at the same level**

Cooperation is a strategic element, especially for collecting and interpreting local climate change data. Territorial monitoring and analysing the information and data directly collected in the field have become important tasks for many administrations. These fresh data are a valuable element for improving the quality of the scenarios for how climate change will evolve. Cooperation in the Alpine

area should be fostered because is useful to set up standards and shared methodologies that make information transferable from one context to another.

- **Build and use a common knowledge base through interdisciplinary and transnational collaboration**

Taking the example of the PermaNET project, assembling all experiences and measurements into a single knowledge base has created a sophisticated decision base and has led to the development of a consistent map of permafrost distribution in the Alps. This example could be extended to many other similar situations. Creating common knowledge bases is essential for giving local civil servants a more solid base for their daily work in managing Alpine territories.

- **Start acting**

Institutions and public bodies bear great responsibility in decisions concerning adaptation to climate changes. Over the last ten years, the appeals for more effective political action against the negative effects of climate change have been so clear and sometimes so easy to apply that the first recommendation is to start acting.

- **Create a legal framework for climate change and set up funds**

Because a large selection of recommendations and research findings is available, it is now time to prepare a suitable legal framework for climate change policies and to budget funds for implementing them. This is not easy to do, especially when almost all public administrations are facing a drastic reduction in financial resources and when the priority is to support investment for economic development. However, even the expenses of climate change compensation could be a source of opportunities for new jobs, considering needs in terms of land protection, new technologies for energy production, consumption, and so on.

- **Put climate change adaptation at the top of the priority list**

Climate change adaptation must be at the top of the list of political concerns and, like policies for public health and military security, this should be one of the costs fixed in every public budget. In Europe each year, the cost to repair damage caused by climate change amounts to several billion euros and even more resources are required to decrease this risk to a reasonable level.

- **Put statements into practice**

Policy-makers should express clearer commitments. The majority of white books and white papers do not have an implementation section in terms of program and project management, and too often they risk remaining only statements on paper.

Natural hazards

The results of the AdaptAlp project (Meeting the risk ... 2011) are the most advanced and are implementable in the near future.

- **Develop an integrated risk-management framework**

The complex territorial situation in the Alps demands integrated risk management of natural hazards that is part of a holistic understanding of natural risks that includes risk analysis, risk evaluation, and reduction. Integrated risk management should incorporate all the measures that contribute to

reducing the damage caused by natural hazards. These measures include emergency management during disasters, maintaining protective structures, and maintaining protective forests. Integrated risk management is a task that must be carried out at transnational, national, regional, and local administrative levels, and it requires the interconnected and coordinated effort of many actors and institutions at each administrative level. All responsibilities and actions must be coordinated and must complement one another.

- **Make use of existing data and favour the creation of long-lasting data sets**

It is important to make optimum use of knowledge, experience, and information so that the potential synergy of all the institutions involved can leverage the cost-effectiveness of risk-appropriate measures. The use of long-lasting data sets has to be favoured to better understand the evolution of small areas where the processes are highly uncertain.

- **Foster risk communication and risk dialogue**

Risk communication and risk dialogue are the preconditions for efficiently coordinating all actors' activities. Without this, the advantages of integrated risk management cannot be obtained. Risk communication and risk dialogue must be promoted and appropriate training must be provided. Risk communication must address the young (risk education), and risk communication should be an essential component of disaster risk management in the municipalities. Regular events need to be held that ensure the involvement of authorities, experts, stakeholders, and citizens affected.

- **Consider the influence of climate change on natural hazards**

The most effective strategy for dealing with the influence of climate change on natural hazard processes is measured consideration of natural hazard processes in land-use planning, strengthening personal responsibility for protecting property, and risk-appropriate priority-based investment in risk-reduction measures such as early warning, prevention, emergency planning, and so on. In line with the current state of knowledge, it is recommended that the effects of climate change on natural hazards be considered only if they are reliable and significant. It is recommended to avoid generalizing individual effects of climatic changes to all natural hazards across all locations in the Alps.

- **Cooperate beyond borders and across sectors, and apply multi-level strategies**

Preventing disasters caused by natural hazards is an area where political action should demonstrate its capacity to cooperate and work beyond borders. Policy-makers and local administrators can immediately apply multi-level strategies to start a territorial rebuilding process, including the effects of natural hazards in new spatial development scenarios.

- **Develop a common Alpine strategy for resilience to natural hazards**

Having examined several Alpine Space Programme projects, we noticed that many recommendations for natural disaster prevention are transferable from one type of natural hazard to another, or they can merge into a common Alpine strategy for resilience to natural hazards. All of these examples lie in the hand of politicians and public administrators, who should motivate their institutions to act towards changing the long-term trend in Alpine land use.

Environmental protection

- **Be proactive**

The role of civil servants in environmental protection is, first of all, an ethical commitment, which starts with the awareness they are at the centre of a system that can influence the future. Being proactive could be the synthesis of an attitude that demands constant engagement to foster the efficiency of public policies.

- **Make governance a component of the environmental protection process**

The responsibility in implementing environmental protection policies includes the will to be an essential part of the governance process, not refusing to face the dynamic evolution of Alpine territory. An example comes from spatial development strategies and projects, where one can find many practical recommendations for the sustainable development of settlements, services provided by them, and mobility. White books describe transferable governance strategies that should serve as a guideline for regions and territories seeking to implement some specific tools. Other projects present more detailed recommendations that should help in better taking into account services of general interest within legal frameworks; for example, in spatial planning.

- **Use new technologies**

Even new technologies, especially advanced GIS based tools, can help spatial planners to steer land use in such a way as to preserve natural habitats and also allow sustainable development and production.

- **Combine long-term thinking and project action**

Politics should work on a short-term agenda: long-term objectives are essential to address trends, but project action, perhaps as part of long-term strategic thinking, is a critical component of environmental governance. Defining and respecting intermediate goals could be a good approach to correcting or changing long-term strategies that turn out to be adapted to effectively attain the expected results.

Recommendations to the Alpine Space MA in order to put more emphasis on spatial development issues in 2014+

- **Converge towards common action**

The Alpine Space Programme could contribute to this approach. Starting with the beginning of the programme period, it could be useful to include a capitalization project for each priority axis, aiming to immediately highlight the most important actions to implement for climate change adaptation, natural risk management, and environmental protection, and addressing these findings to policy-makers.

References:

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Last update: **2014/12/29 15:41**

