Interreg III B "Alpine Space"

DIAMONT - Data Infrastructure for the Alps /
Mountain Orientated Network Technology

Analysis of Experts' Assessments of Alpine Development (WP6)

WP6 report – short form

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Executive summary: DIAMONT major Alpine issues

Based on a Delphi survey involving the participation of about 60 experts from various countries concerned by Alpine development, the DIAMONT project identified, in work-package 6 (WP6), eight key issues relating to current and future development trends in the Alps, and analysed the major problems facing the Alps today. WP6 also identified relevant phenomena that could be observed to assess the importance of these issues. Associated with each major issue, the problems identified are interrelated and can therefore be analysed in a coherent way.

First, the study focussed on an identification of general trends that affect the Alps but are by no means specific to them: globalisation, increasing awareness of threats to the natural and cultural heritage, increasing mobility of goods and persons, increasing competition between firms, and sometimes regions, diminishing demographic growth rates, change in the meaning of local identity, standardisation of lifestyles, or agriculture multifunctionality. These trends were then reinterpreted and reformulated in the context of the Alps as major issues that are ongoing rather than evolutional, since they arise from factors and conditions that are not subject to rapid change, and express, in turn, more general trends like those evoked above. These are:

- *Marginalisation of peripheral rural areas,* which is a general concern for those Alpine areas which are not involved either by periurbanisation processes or tourism development, and for which the main concerns are the abandonment of agricultural land, poor accessibility to everyday services, emigration of the working population, etc.

According to the experts, the most relevant phenomena for observing marginalisation processes are those linked to changes in agriculture: decreasing importance of agriculture as a fundamental economic activity; increasing importance of second incomes in maintaining agricultural activities; increasing promotion of regional and local quality labels for agricultural products; devaluation and abandonment of less productive plots of agricultural land. The experts also added certain phenomena relating to trends in the provision of everyday services: decreasing efficiency in public and private service provision; changing demands for local services due to the increasing proportion of elderly people in the population.

- *Maintenance of Alpine forests,* since there is a trend towards the extension of wooded areas that raises questions concerning the long-term management of forest cover and the way in which forests will fulfil the functions assigned to them.

For this issue, the most relevant phenomena are those likely to take on increasing meaning in the future, relating for example to new opportunities for Alpine forests. Thus experts suggested focusing on "the use of the forest as an environment-friendly resource (biomass, etc)" and on "the awareness of the benefits of ample forest cover for the prevention of natural hazards".

- *Urbanisation processes,* raising questions about urban-rural relationships, the side-effects of urban expansion for villages or small traditional centres, the efficiency of land use planning in urban regions, the role of agglomerations as economic focal points in a region where the land available in valleys and basins is limited.

The most relevant phenomena regarding urbanisation processes are those relating to regulatory controls on land use, which bring into question both the present and the future status quo of urban regions. Such phenomena are: the continuing spread of urbanisation in sensitive areas - valley slopes, flood expansion areas, etc; uncontrolled urban sprawl with its effects on landscape aesthetics; and, setting up planning documents that include city peripheries.

- *Tourism sustainability,* since tourism is an important economic sector in many Alpine regions and illustrates the necessity to reconcile economic competitiveness with respect of the fundamental natural and social values that underpin its sustainability.

With regard to related phenomena, experts underline the "development of innovative formula to meet rapidly changing tourism demands" as being important in affecting this issue in the future.

The last major issues identified have, above all, a thematic dimension and concern Alpine space as a whole; nevertheless, regional differences in these issues may be identified within the Alps.

- *Transport pressures*: originating from both within and outside the Alps, these are indicative of the difficulties in coping with increasing mobility and the openness and attractiveness of the Alpine region.

As for the relevant phenomena for studying this issue, experts focused on the "increase in pollution in steep-sided valleys along transit routes" and, for future development, on "efforts to limit traffic flows in sensitive areas".

- *Innovative and competitive economic activities:* in the Alps, as elsewhere, these are key factors of economic development, allowing firms to compete in an increasingly global market.

With regard to this issue, the experts focused on certain phenomena that could exert considerable influence in the future, namely the "concentration of highly innovative activities in already favoured areas", "new opportunities to develop niche activities", and the "involvement of local governments in economic development projects".

- *Maintenance and development of the natural and cultural heritage:* This issue should not be forgotten in the Alps and in particular the question of the "flimsiness" of this heritage and the fact that it should not be seen as static.

To identify future changes affecting this issue, the experts focused on a series of phenomena including "development of environment-friendly agricultural techniques - organic farming, etc"; "maintaining a network of open spaces in valleys and densely populated areas"; "measures regulating the consumption of space"; and 'implementation of water quality management programmes". The experts had less to say about cultural heritage issues.

- *Climate change effect:* This effect cannot be totally predicted in the Alps but it may differ from the effect outside the Alps, due to the specific conditions of the Alpine environment and economy.

The most relevant phenomena for describing future developments of this issue were identified as: "shorter winter seasons in ski resorts"; "increasing pressure from winter tourism on protected areas at higher altitudes"; "more severe restrictions on building in areas exposed to risks of natural hazards"; "further development of energy-saving options for transport and housing"; and finally, '"more investment in GHG-reducing technologies".

Thus, the experts focused mainly on those aspects of most importance in the Alpine context and likely to have an impact on future development, leaving out other aspects which although important are not specific to the Alps. For example, they did not focus so much on social imbalances with respect to unemployment or the lack of access to tertiary education. On the other hand, they focused on territorial imbalances within urban and rural regions, aspects which attracted little attention in the ESDP. This is one of the reasons why the DIAMONT project has decided to focus, in the subsequent studies, on an important and complex issue revealed in the results of the WP6 analyses, which is 'local centres and fringes between competence and cooperation'.

Introduction: changes in Alpine issues

The overall task of the DIAMONT project is to observe development trends and relevant issues in the Alpine Space and thus to provide input for an assessment of the future sustainable development of this region. It is clear that a prerequisite for achieving sustainable development in this region, which includes several nationalities, languages, cultures, and governance systems, is more detailed and up-to-date knowledge on the specific structures and problems affecting the Alpine space.

The DIAMONT project therefore started with two pre-studies aimed at providing basic information on the development of Alpine regions. Work-package 5 (WP5) was aimed at determining how cultural differences like norms, administration systems and values influence regional policy development. In work-package 6 (WP6), the main objective was to identify the key issues of development in the Alpine regions, with reference to present and future problems, challenges and even opportunities. In addition, WP6 also had to draw operational conclusions for subsequent tasks in DIAMONT, identifying, for example, indicators illustrating these issues and helping to identify them at the regional level. Finally, the results of WP6 were used in choosing a specific key issue that will be investigated in more detail in the course of the project. All these tasks will help in defining suitable development indicators to describe development processes and ultimately to develop and optimise indicator-based and qualitative tools to stimulate and steer regional development. This development will be evaluated in chosen test-regions.

In this way, DIAMONT questions the sustainability of development in the Alpine Space, which though important may express itself differently from one region to the next, depending on cultural aspects and modes of development. This is why it was decided to develop a comprehensive approach in DIAMONT that would take into account more in-depth key issues considered to be particularly significant in terms of sustainability, and to express them in operational terms. Moreover, since the major trends affecting the Alpine region may change over time, DIAMONT questions whether the current challenges facing the Alpine Space are the same as those identified previously, notably in 1991 at the signing of the Alpine Convention when the Alpine states and the European Union agreed on a policy of sustainable development for the Alpine regions. The Alpine Convention used various protocols to define common objectives for relevant sectors, such as agriculture, tourism, transport, energy supply or nature conservation. However, even 15 years later these protocols have not yet been ratified by all the Alpine states. Despite stressing the necessity of intergovernmental solutions for common problems, there is always the risk that the problems will change during the lengthy political processes. This is why the Alpine Convention calls for updates of the analyses of the main development trends in the Alps, so that answers can be found to problems that are becoming increasingly important.

1 WP6 method and activities

To identify current Alpine development issues, WP6 did not base its work on a literature review, policy documents or existing surveys, but on the opinions expressed by a panel of experts in a Delphi survey. The survey sought to determine the experts' perceptions of major Alpine issues by examining their attitudes on current and future challenges for regional development in the Alps. By selecting a panel of experts well acquainted with sustainable development issues, including scientists, stakeholders, civil servants, and representatives of NGOs from the different Alpine countries, we did not base our identification of Alpine development issues on the policy objectives intended to deal with these issues, but on the individual perception of these issues by a group of well-informed observers. Obviously, all these experts have subjective opinions, but the Delphi survey technique enables a scientific analysis of individual and subjective opinions in order to identify convergent opinions and reasons for divergences.

1.1 WP6 Delphi survey

The Delphi survey technique consists in consulting the same experts in several successive rounds by soliciting their opinion by means of questionnaires that are based on and inform participants of the results of the preceding rounds. At the beginning, it was therefore a question of collecting overall assessments of Alpine issues in various thematic areas. The formulation of these issues was then clarified and convergences and divergences in the assessments of the experts were identified.

In WP6, three rounds were conducted: The figure below shows the sequence of analyses in the survey.

- In the first round, launched in June 2005, a general assessment of Alpine issues was obtained with respect to various thematic domains, covering all those areas concerned by the Alpine Convention.

The results revealed substantial convergence between experts views on important issues, such as the abandonment of cultivated land or the disappearance of cultural diversity and Alpine identities. However, there was a wider range of opinions regarding the causes of these issues, their current stage of development, and the consequences of their possible future development.

- This is why the second round, launched in September 2005, focused mainly on those issues which seemed to be the most important for the future and in need of further analysis, given that their causes and consequences might be debatable. The analysis involved proposing interpretations of these issues by formulating statements or 'theses' concerning their current stage of development, their main causes and possible consequences.

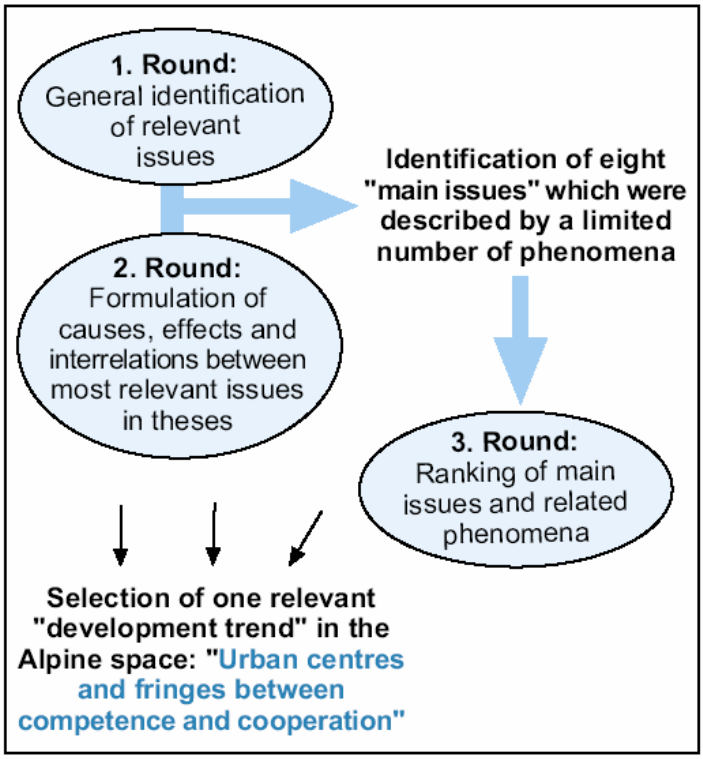
Experts' assessments of the relevance of these theses and how to formulate them proved a powerful means of identifying questions and problems relating to the issues, the way they are interlinked and the variety of ways in which they are expressed within the Alps. This round thus made it possible to arrange the issues to be investigated in a coherent scheme where each issue

makes sense and is related to a more general sustainable development issue that is significant for the future of the Alps.

➢ The last round, launched in January 2006, consisted in giving a more concrete meaning to the main issues by assessing their current and future importance through relevant or related phenomena. By phenomena, we mean facts or trends that may be observed or perceived and that will provide input on relevant aspects to be taken into account in analysing the different issues. We assumed that, in spite of their complexity, the main Alpine issues identified could be handled by a limited number of phenomena describing their important characteristics and possible developments.

Thus, it was then a question of ranking the current and future relevance of proposed lists of phenomena related to the main issues. The most relevant phenomena should be observed through data and indicators, namely at regional or even local levels, in order to reveal to what extent the main issues combine together and overlap within the Alpine areas.

Analytical sequence in the Delphi survey



The survey was organised in a decentralised manner, with each DIAMONT team responsible for launching the survey in its respective area, sending out the questionnaires and collecting the answers. All the results, however, were analysed by the French team, which was responsible for WP6 and obtained assistance from the Italian partner for the management of general tasks. Around 60 experts from all the Alpine countries were selected to participate in the survey by the partners in the DIAMONT project[1] (see table below and list of experts in Appendix).

[1] In fact, the Swiss partners in the DIAMONT project were not able to conduct the survey in their country. It was therefore conducted by the Austrian and French partners, but it did not manage to attract as many experts as had been hoped.

Experts participating in the Delphi survey

Round	Type of expert	Number of experts by country						
		AUS	SW	G	FR	IT	SL	All
First round	All	11	5	15	10	10	11	62
Second round		7	6	14	8	9	7	51
Third round		5	4	13	9	8	7	46
First round	Scientists	2	5	3	5	4	5	24
Second round		7	5	4	5	5	4	30
Third round		5	4	3	5	3	4	24
First round	Others	9	0	12	5	6	6	38
Second round		0	1	10	3	4	3	21
Third round		0	0	10	4	5	3	22

1.2 WP6 objectives

The main objective of the survey, the results of which are described in subsequent sections, involved identifying eight main issues and describing them in terms of a limited number of phenomena. It was assumed that the experts would be able to put aside their short term visions of Alpine issues and express their views about the expectations of the Alpine population based on their competence or experience in dealing with tensions or problems related to Alpine development. It was also assumed that the variety of experts participating would ensure that results would not be affected by any unilateral or biased thinking on Alpine development. The WP6 objectives may thus be described as follows:

- Identify key Alpine issues, the forms they take at present, and their desirable forms for the future;
- Analyse related problems, either through the policy responses to these problems or in terms of current attitudes and expectations which cannot be expressed directly in terms of policy aims;
- Identify through the variety of expert opinions the main factors that may lead to convergence or divergence in the perception and ranking of key Alpine issues;
- Finally, draw operational conclusions by underlining, through relevant phenomena, the links between Alpine issues and the ways to reveal their importance, and provide guidelines for choosing the key issue to be focused on in subsequent stages of the DIAMONT project.

We believe that the Delphi survey enabled us to adequately meet the first objective, but to only partially meet the second objective. Information gathered helped identify certain major Alpine issues, namely in terms of problems to be dealt with now or that may arise in the future. However, the question of policy responses and policy instruments to deal with identified problems was not really addressed, since a review of policies and related instruments was outside the remit of the survey (However, it will be central to subsequent WPs, such as WP9).

The third objective was also only partially met. As described in the next section, no general conclusion emerged from an analysis of factors capable of influencing experts' opinions.

On the other hand, the fourth objective, which was especially focused on in the third round, was well attained, since no less than 82 phenomena were analysed and ranked in importance with

respect to the present and the future. The better understood phenomena were left out in the third round, which focused instead on less obvious phenomena. Among these phenomena, it was possible to distinguish those which are still emerging and will become increasingly important in the future from those which are more current and can already be observed. All these phenomena will be considered in WP7 which will be aimed at establishing an indicator framework in which indicators referring to the different phenomena are related both to the three pillars of sustainability and to the main issues identified by the DIAMONT project.

WP6 also provided information for helping to select which main development trend would be focused on in subsequent DIAMONT studies. The main trend that was chosen, "local centres and fringes between competence and cooperation", concerns one important aspect of the main issue "urbanisation process", identified and analysed in WP6.

1.3 Difficulties encountered and solutions

Obviously, in gathering experts' opinions on Alpine issues and analysing them in the course of a Delphi survey, WP6 had to cope with an extensive subject area – Alpine development – and, as in all Delphi surveys, with the fact that all the related issues were not fully understood, or not in the same manner, by all the experts.

- The first round questionnaire was divided into several thematic areas, defined in reference to the scope of the Alpine Convention. Moreover, since the AC does not essentially deal with topics such as competitiveness or the restructuring of old industries, further areas were added to take into account economic development issues, as well as other possible issues not dealt with in the questionnaire. Due to the wide-ranging nature of the subject, the issues considered as relevant for the experts dealt with a variety of topics.

For this reason, it was decided to focus, in subsequent rounds, only on certain issues considered as important. Thus the second round questionnaire mainly addressed issues which, on the basis of the divergence in experts' opinions, had debatable causes and consequences. It was then a question of first identifying a set of main issues, which cover a variety of detailed issues evoked by the experts and make it possible to analyse related problems in a coherent manner, and then assessing the relevance of a series of proposed phenomena that could give concrete meaning to these main issues. However, there is always a risk, in such a process, of overlooking some issues: particular attention was therefore paid to comments from the experts, who in some cases criticised the choice of issues investigated.

- The normal procedure in a Delphi survey is to conduct an in-depth analysis of divergent and convergent opinions on pre-identified phenomena or issues, in order to develop a common understanding of these phenomena and enable them to be ranked. Since experts' responses revealed more the variety of aspects encompassed within each issue than hard and fast differences of opinion on the nature and importance of Alpine issues and related problems, it appeared unrealistic to adopt this usual procedure. Moreover, since experts' responses conveyed a considerable amount of information, namely in the form of comments accompanying the answers, we felt that the most valuable information came more from these comments than from opinions on the relevance of the issues expressed through ranking. In other words, we considered that the experts acted above all as informants helping us to develop the analysis.

- Finally, since individual opinions often differed from one expert to another, we felt it made little sense, when comparing answers, to base this solely on the statistical averages of ranking codes, and thus tried to identify those factors that may have influenced experts' opinions. We questioned the reasons for the divergence in opinions observed, considering various criteria that could have affected this.

These criteria, for which the questionnaires provided valuable information, were the profile of the experts, and in particular the distinction between scientists and others (stakeholders, government officers, NGOs representatives, etc), their nationality, and the competence they considered they had in the field. We tried to assess to what extent the opinions were influenced by these criteria. We also tried to determine to what extent divergences of opinion were based on geographical and temporal aspects. Thus, some experts expressed opinions concerning only their own region or country, declaring they were not in a position to provide assessments for the entire Alpine Space. Similarly, certain experts analysed the current situation, declaring they could not have firm opinions on future developments.

No general conclusion emerged, however: in some cases, the criteria considered play a role, while in other cases their role is less perceptible. More importantly, in most cases there was no significant correlation between experts' self-assessed level of competence and their individual assessments, even though it might have been imagined that experts doubtful of their competence would express rather more prudent opinions. This is why we considered that divergences of opinion result more from individual differences in sensitivity than from more 'objective' factors. We interpret this as a reflection of the complexity of the issues analysed. This failure in identifying factors influencing opinions can be seen as a limitation of the Delphi survey technique in which the issues were not envisaged in terms of decision making, but rather in terms of their contribution to scientific debate and analysis.

2. WP6 Main issues of Alpine development and relevant phenomena

There is obviously a diversity of issues relating to development in the Alpine Space. For example, the Alpine Convention concentrates on the maintenance of the natural heritage and the living environment of the Alpine population, whereas European, national or regional policies focus more on the economic and social conditions underpinning sustainable development in the Alps. Although some issues may have been overlooked by the experts, the size and composition of the DIAMONT panel guaranteed that a wide variety of opinions would be expressed and numerous issues dealt with.

2.1 General outlook

Since the first round of the Delphi survey failed to determine which key issues, among those identified, would be most important in the context of Alpine development processes, the challenge was to conceptualise the factors or trends which underpin sustainable development in the Alps and thus underlie the different problems and issues investigated. In other words, it was a question of identifying mega-trends to provide a context for a coherent analysis of Alpine issues.

For example, the abandonment of agricultural land was identified in the survey as concerning above all those rural areas which cannot compete with more favourable areas and do not benefit from support in the form of second incomes for farmers, for example, or quality-labelled products. On the other hand, agricultural land abandonment may be seen as an opportunity to recreate wilderness areas and new forms of tourism. However, to limit further abandonment of agricultural land, experts suggested that a prerequisite might be the maintenance of tolerable living conditions for the farmers and inhabitants of remote areas. Public services, particularly health care, must be kept accessible at the local level.

Using information gathered in the survey, WP6 succeeded in identifying and analysing eight main issues. Starting with an identification of general trends that are not only of concern to the Alps, such as globalisation, the growing awareness of threats to the natural or cultural heritage, the increasing mobility of goods and persons, the intensification of competition between firms and possibly regions, diminishing demographic growth, change in the meaning of local identity, standardisation of lifestyles, and agricultural multifunctionality, the study then reinterpreted these trends and reformulated them in the context of the Alps.

Some major Alpine development issues identified are specific to certain types of area within the Alpine region, while others result more from external factors and concern the Alps as a whole, although their effects can be spatially differentiated. For example, the experts focused on distinctions between remote rural areas and more central areas, on the impact of increasing traffic, both internal and transit, in the Alps, or the role of Alpine cities in the spatial development of the region.

Finally, we identified eight major Alpine development issues on the basis of the main trends observed at different spatial levels, and ranked the relevance of sets of phenomena in revealing these issues. Within each major issue, problems are interrelated and can therefore be analysed in a coherent way. In fact, these major issues are more on-going or permanent than evolutional,

since they emerge from factors and conditions that are not subject to rapid change, and in turn express more general trends like those evoked above. These are:

- *Marginalisation of peripheral rural areas,* which is a general concern for those Alpine areas which are not involved either by periurbanisation processes or tourism development, and for which the main concerns are the abandonment of agricultural land, poor accessibility to services, and the emigration of the working population, etc.

According to the experts, the most relevant phenomena for observing marginalisation processes are those linked to changes in agriculture: decreasing importance of agriculture as a fundamental economic activity; increasing importance of second incomes in maintaining agricultural activities; increasing promotion of regional and local labels for agricultural products; devaluation and abandonment of less productive plots of agriculture land. The experts also added certain phenomena relating to trends in the provision of everyday services: decreasing efficiency in public and private service provision; changing demands for local services due to the increasing proportion of elderly people in the population.

- *Maintenance of Alpine forests,* since there is a trend towards an extension of wooded areas that raises questions concerning the long-term management of forest cover and the way in which forests will fulfil the functions assigned to them.

For this issue, the most relevant phenomena are those likely to take on increasing meaning in the future, relating for example to new opportunities for Alpine forests. Thus experts suggested focusing on "the use of the forest as an environment-friendly resource (biomass, etc)" and on "the awareness of the benefits of ample forest cover for the prevention of natural hazards".

- *Urbanisation processes,* raising questions about urban-rural relationships, the side-effects of urban expansion for villages or small traditional centres, the efficiency of land use planning in urban regions, the role of agglomerations as economic focal points in a region where the land available in valleys and basins is limited.

The most relevant phenomena regarding urbanisation processes are those relating to regulatory controls to achieve efficient land use, bringing into question both the present and the future status quo of urban regions. Such phenomena are: "the continuing spread of urbanisation in sensitive areas - valley slopes, flood expansion areas, etc"; "uncontrolled urban sprawl with its effects on landscape aesthetics"; and, "setting up planning documents that include city peripheries".

- *Tourism sustainability,* since tourism is an important economic sector in many Alpine regions and illustrates the necessity to reconcile economic competitiveness with respect of the fundamental natural and social values which underpin its sustainability.

With regard to related phenomena, experts underline the "development of innovative formula to meet rapidly changing tourism demands" as being important in affecting this issue in the future.

The last major issues identified have, above all, a thematic dimension and concern the Alpine space as a whole; nevertheless, regional differences in these issues have developed within the Alps.

- *Transport pressure*: originating from both within and outside the Alps, this is indicative of the difficulties in coping with increasing mobility and the openness and attractiveness of the Alpine region.

As for the relevant phenomena for studying this trend, experts focused on the "increasing pollution in steep-sided valleys along transit routes" and, for future development, on "efforts to limit traffic flows in sensitive areas".

➢ *Innovative and competitive economic activities:* in the Alps, as elsewhere, these are key factors of economic development, allowing firms to compete in an increasingly global market.

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➢ *Maintenance and development of the natural and cultural heritage:* This issue should not be forgotten in the Alps and in particular the question of the "flimsiness" of this heritage and the fact that it should not be seen as static.

To reveal future changes affecting this issue, the experts focused on a series of phenomena including "development of environment-friendly agricultural techniques - organic farming, etc"; "maintaining a network of open spaces in valleys and densely populated areas"; "measures regulating the consumption of space"; and 'implementation of water quality management programmes". The experts had less to say about cultural heritage issues.

➢ *Climate change effect:* This effect cannot be totally predicted in the Alps but it may differ from the effect outside the Alps, due to the specific conditions of the Alpine environment and economy.

The most relevant phenomena for describing future developments of this issue were identified as: "shorter winter seasons in ski resorts"; "increasing pressure from winter tourism on protected areas at higher altitudes"; "more severe restrictions on building in areas exposed to risks of natural hazards"; "further development of energy-saving options for transport and housing"; and finally, '"more investment in GHG-reducing technologies".

In the following paragraphs, a general introduction to each major issue is provided, based mainly on the first round results. This is followed by a presentation of experts' assessments and comments in relation to the second round theses used to help analyse the issue and to identify related current or future problems. Finally, the results obtained in the third round are presented, concerning those phenomena that are considered relevant for observation at the moment and/or in the future.

2.2 Marginalisation of rural areas

Rural areas in the Alps are currently developing in very different ways. In the catchment zones of urban centres and agglomerations some rural areas are undergoing suburbanisation processes, while others are capitalising on tourism development. Our focus in examining the marginalisation issue is on those rural areas which are not affected by either suburbanisation processes or tourism development.

This type of rural area, regarded as "disfavoured" by the EU, is characterised by an abandonment of traditional agriculture and often by population decline and ageing, due to the emigration of younger people. On the one hand, these areas suffer "push" effects due to the lack of attractive economic alternatives to agriculture and the decrease in public and private services. On the other hand, they may be influenced by "pull" effects arising from increasing social and economic possibilities offered by urban and suburban areas in or outside the Alpine region. Nevertheless, in spite of unfavourable conditions, new opportunities can emerge: structural changes and modern communication technologies create new economic and social perspectives. The abandonment of agriculture is also an opportunity for developing and expanding more natural habitats and new wilderness areas.

➢ Based on this first analysis, three second round theses were proposed dealing with marginalisation issues (see table below).

One thesis asserted that there were *increasing differences between marginal and favoured areas, with large scale land abandonment in steep and remote regions, and difficulties in maintaining the landscapes, in spite of subsidies to maintain agricultural activities.* Most experts agreed with these statements, but argued, for instance, that subsidies could only, at best, postpone the abandonment of agricultural land. Mountain agriculture will remain hampered by its lack of competitiveness, increasing production costs and, in some cases, difficulties in finding manpower. Assuming a steady decline of traditional agriculture, the maintenance of the cultural landscapes will depend mainly on society's willingness to pay subsidies.

Another thesis suggested that the *inhabitants of rural areas are in danger of losing their vital services, since there appear to be no substitutes for the agricultural sector as the backbone of the rural economy, nothing that could guarantee the vitality of these areas*. Most experts agreed that the services offered no longer meet needs, and that isolation, ageing and depopulation are a threat for areas of limited population. Some experts, however, disagreed and argued that these processes are not related to declining agriculture. They also occur in areas of declining industry and result more from the relocation of public services to 'central places' for economic reasons. As a lot of administrative matters can now be dealt with through the Internet, the crucial factor will be the supply of health services.

A third thesis dealt with the role that tourism could play *in supporting agriculture and preventing any risks of large-scale abandonment of managed land*. Most experts found this thesis unrealistic, to a certain extent, as they consider it unlikely that the tourism industry will subsidize traditional agricultural practices. However, there are other low cost alternatives to agriculture for maintaining an attractive cultivated landscape. In any case, increasing areas of wilderness will not discourage the tourists. Therefore it is important to strengthen mountain agriculture by developing other strategies, such as the direct marketing of niche products.

Assessments of second round theses dealing with marginalisation of peripheral rural areas

Average scores range from 1 (meaning the thesis is not accepted) to 4 (meaning it is accepted), and are based on the assessments of individual experts

Thesis	*Although agricultural decline has already taken place all over the Alps, the difference between marginal and favoured areas is becoming increasingly pronounced. This results in large-scale abandonment of land in steep and remote regions, whereas the valley bottoms and plains are the scene of strong competition between industrialized agriculture and urban sprawl. In spite of a few specific innovative initiatives and subsidies for maintaining landscapes, the process is very unlikely to be halted.*	*Inhabitants of rural areas are in danger of losing access to vital services like schools, hospitals, banks, etc. as well as the last job opportunities, insofar as there are no substitutes for the agricultural sector as the economic basis needed to maintain the above-mentioned public services and to guarantee the vitality of these areas.*	*Large-scale abandonment of managed land represents a considerable threat to the development of tourism and recreation (transformation of open land into forested land). The tourism industry therefore has an important role to play in supporting agriculture.*
Average assessment score			
All countries	3.4	3.2	2.6
Austria	3.7	3.8	1.8
Germany	3.5	3.0	3.1
France	3.0	3.3	2.5
Italy	3.0	2.6	2.8
Slovenia	4.0	2.9	3.4
Switzerland	3.5	3.7	2.0
% of assessments			
Correct	57	38	29

Partially correct	34	43	29
Fairly incorrect	2	12	29
Incorrect	6	7	14

- Finally, when considering phenomena related to this main issue (see table below), experts did not place any of them very high or very low. A majority of experts attached importance to the provision of services (including opportunities for employment) and to phenomena related to changes in agriculture. In contrast, opinions were more varied regarding phenomena concerning social life, e.g. isolation or uncertainties about public support for rural development. Three experts considered that increasing isolation due to poor accessibility was irrelevant at the present time.

According to the experts, most listed phenomena will become increasingly important in the future. This would be the case, for example, for the change in demand for local services as the proportion of elderly people in the population increases. Although experts do not attach too much importance to this question at present, they consider it an *emerging* phenomenon, to which attention should be paid in the future.

The experts added numerous comments to the list of proposed phenomena. Thus, they underlined the importance of changes in agriculture, cutbacks in public funds for agriculture and opportunities to develop environment-friendly solutions. They also mentioned the lack of integrated strategies, which could promote training for jobs in national parks, for example, or new innovative enterprises. Some experts drew attention to social issues, claiming that public policies do not attribute sufficient importance to them and instead focus more on economic development. These experts consider, in fact, that changes in living conditions will increasingly become determining factors in these areas.

Assessments of the relevance of phenomena related to marginalisation of peripheral rural areas

Average assessment scores range from 1 (meaning the phenomenon is not very relevant) to 4 (meaning it is very relevant) and are based on the assessments of individual experts

Phenomenon	Temporal dimension of assessment	Average assessment scores							% of assessments	
		All countries	Austria	Germany	France	Italy	Slovenia	Switzerland	quite relevant or very relevant	of little or very little relevance
Growing isolation due to poor accessibility	present state	2.36	2.00	2.00	2.00	3.13	2.67	2.50	47	47
	future	2.43	2.33	2.18	2.25	2.86	2.57	2.67	40	49
Growing isolation due to weakening of social links	present state	2.40	1.83	1.55	3.11	3.00	2.75	2.50	45	51
	future	2.67	2.50	2.09	2.89	3.25	2.71	2.75	55	40
Decreasing efficiency in public and private service provision	present state	2.79	2.67	2.54	2.78	3.00	3.00	2.50	64	36
	future	3.04	3.17	3.08	2.88	3.25	2.86	3.00	70	28
Change in demands for local services due to increase in the proportion of elderly people	present state	2.55	2.17	2.31	2.78	2.75	3.00	2.25	49	51
	future	3.02	3.00	3.00	3.00	2.75	3.43	3.00	85	13
Lack of local opportunities for work	present state	2.83	2.67	2.42	2.89	3.13	3.50	3.25	64	34
	future	2.98	2.83	2.77	3.00	3.25	2.86	3.50	70	28

Decreasing importance of agriculture as fundamental economic base	present state	2.98	2.50	2.92	3.00	3.13	3.00	3.00	66	30
	future	3.07	2.50	3.38	3.38	2.57	3.14	3.00	68	26
Uncertainty of public funds to support rural development	present state	2.50	2.40	2.38	2.89	2.50	3.75	2.50	45	53
	future	2.93	3.00	2.92	3.25	2.14	2.86	3.75	62	32
Decreasing competitiveness	present state	2.73	2.80	2.85	2.38	2.88	3.00	2.50	55	40
	future	2.91	2.20	3.31	2.75	2.71	3.00	3.00	62	32
Increasing importance of second incomes in maintaining agricultural activities	present state	3.02	3.17	2.92	2.86	3.50	2.50	2.00	72	23
	future	3.34	4.00	3.15	3.00	3.86	3.43	2.50	77	17
Increasing promotion of regional and local labels (brands) for agricultural products	present state	2.90	2.67	2.77	2.94	3.13	3.25	2.75	69	31
	future	3.36	3.33	3.00	3.88	3.50	3.43	3.25	83	15
Devaluation and abandonment of less productive agricultural land	present state	2.80	2.67	2.69	2.63	3.14	3.00	2.75	60	36
	future	3.04	2.33	3.15	3.25	3.00	3.29	3.00	70	26

2.3 Maintenance of Alpine forests

The decline of agriculture and the marginalisation of rural areas is expected to lead to an extension of woodland areas. This trend should be examined in the context of the three functions fulfilled by forests.

Considering the recreational function, the increasing forest cover is creating new wilderness areas providing habitat for woodland species. These wilderness areas are also highly attractive for eco-tourism and recreation. However, Alpine forests also fulfil economic and protective functions. The first of these functions is dependent on external parameters, such as the world prices of wood resources, as well as internal parameters, such as the demand from local wood product manufacturing industries. At the moment, the profitability of Alpine forests is rather low, but in the long run the demand for wood, a renewable resource, is expected to increase. The protective function of forests is very dependent on sustainable and regular management of forest areas, in particular on steep slopes and in the vicinity of settlements, traffic routes and other constructions (e.g. tourism centres or water reservoirs).

Nevertheless, forests, which are of vital importance for their protective function, are often of less importance from an economic or recreational standpoint; the expansion of forests might also foster forest management for economic purposes in certain areas. Thus, the main concern is how to reconcile these three functions and, in particular, how to cover the costs of forest management for risk prevention purposes in areas where the economic function provides limited returns.

- Only one thesis was related to the issue of Alpine forests. This asserted that *due to market conditions, mountain forests are becoming less attractive from an economic point of view*, and that *only in the long run, will natural plant succession processes be able to make this resource more attractive, in terms of biodiversity and for recreation and tourism*.

Most experts modified this thesis. On the one hand, they agreed that at the moment the use of mountain forests is still only attractive for special niche markets. On the other hand, an increase in the demand for wood and a trend towards using the resource in alternative ways, such as for the production of biomass energy, may enhance its economic attractiveness. However, forest

use will increase only in forests with good accessibility. In fact, many experts considered the main function of mountain forests to be the prevention of natural hazards rather than their contribution to biodiversity or to recreation and tourism amenities.

Forests were also mentioned from time to time in other theses. For example, some experts questioned whether an increase in forest cover would reduce tourism attractiveness or whether the rise in tourist demand for wildlife might be satisfied with larger areas of semi-natural mountain forests. Other experts played down the role of natural succession processes in closing the landscapes, arguing that in mountain areas, these processes are slow and affected by climate change; thus, more attention is to be paid to increases in shrub vegetation which result from the abandonment of agricultural and pastoral uses and may lead to a reduction in biodiversity.

Assessments of second round theses dealing with the maintenance of Alpine forests

Thesis	*Due to global market conditions, mountain forests are less and less attractive from an economic point of view. Therefore there is less forest management, resulting in a more natural succession of vegetation. During the intermediate phases of this succession, potential risks increase. Only in the long-run will the more naturally structured and composed forests be ecologically more stable, more attractive for recreation and tourism, and more valuable as a natural heritage.*
Average assessment scores	
All countries	3.1
Austria	3.0
Germany	3.0
France	3.0
Italy	3.6
Slovenia	3.4
Switzerland	2.9
% of assessments	
Correct	48
Partially correct	28
Fairly incorrect	13
Incorrect	11

- Experts' assessments of the relevance of proposed phenomena did not reveal a majority of positive assessments for most phenomena at the present time, except for the awareness of the benefit of ample forest cover for preventing natural hazards. Thus little importance was attributed to phenomena relating to slow change processes, such as those linked with global warning. Experts were more sensitive to forest economic issues even though less than half of the experts considered related phenomena to be important, e.g. decline in value of forest harvests or new uses of the forest as an environment-friendly resource (biomass, etc). In addition, some experts felt that the relevance of certain phenomena was debatable or that the phenomena were even irrelevant for the Alps, such as the decline in value of forest harvests or the increase in the effects of toxic pollution (acid rain, etc). At the same time, for some experts, the growing interest in new wilderness areas as tourist attractions seems more of an anecdote than a general trend.

Experts felt that some phenomena will become increasingly important in the future. These are above all those phenomena related to the more limited management of the resource, to those

functions fulfilled by the forest (prevention of natural hazards, ecological corridors and the "oxygenation" of citizens), as well as to new uses of the forest as an environment-friendly resource, an emerging phenomenon. Conversely, experts are not convinced that, in the future, a decline in the value of the forest harvest would be worth considering.

This is why some experts proposed taking into account other phenomena to describe the issue more effectively. For example, they drew attention to damage caused by hunting and to possible conflicts between hunting and other forest uses. They suggested not isolating the prevention of natural risks by ample forest cover from other phenomena, as it concerns the organisation of the entire territory. They felt it necessary not to neglect urbanisation, tourism development (clearing of forests) or economic activities inhibiting or supporting forestry, as they feel that in the future, there will be a growing distinction between those forests which have an economic value and those which are above all wilderness areas. In addition, they mentioned certain factors hindering efficient forest management, such as lack of skilled labour or the reluctance of forest owners to develop human activities on their forest estates.

Assessments of the relevance of phenomena related to the maintenance of Alpine forests

Phenomenon	Temporal dimension of assessment	Average assessment score							% of assessments	
		All countries	Austria	Germany	France	Italy	Slovenia	Switzerland	quite relevant or very relevant	of little or very little relevance
Decline in value of forest harvest	present state	2.61	2.33	2.10	2.67	2.88	2.75	3.50	43	34
	future	2.30	2.33	1.80	3.00	2.14	1.86	2.75	23	47
Lack of profitability of forests on steep slopes	present state	2.68	1.67	2.64	3.00	2.71	3.00	2.50	47	32
	future	2.69	1.67	2.70	3.00	2.43	3.00	3.00	46	30
New uses of forests as an environment-friendly resource (biomass, etc)	present state	2.40	2.00	1.82	2.75	3.00	3.00	1.67	38	51
	future	3.43	3.33	3.18	3.71	3.63	3.67	3.00	81	9
Limited management due to fragmented ownership	present state	2.58	2.20	2.00	3.00	3.00	2.75	2.67	45	36
	future	2.51	1.60	2.25	2.86	3.00	2.14	2.75	38	40
Higher proportion of natural and semi-natural forests without any sylvicultural management	present state	2.21	1.67	1.91	2.86	2.33	3.33	2.67	26	55
	future	2.55	2.00	2.18	3.43	2.50	2.40	3.33	45	36
Increase of risks due to impact of limited management (e.g. game, temporary phases of decaying forest)	present state	2.28	2.33	1.91	2.14	2.71	2.00	2.00	32	53
	future	2.59	2.83	2.36	2.43	2.83	2.57	2.00	47	36
Increase in management costs due to impact of climate change (beetle infestations, damages by storms, snow loads, etc)	present state	2.42	2.33	2.36	2.50	2.33	2.67	2.33	36	45
	future	2.97	3.17	3.00	3.00	2.40	2.86	2.67	54	24
Increase in effects of toxic pollution (acid rain, etc)	present state	2.35	2.67	1.91	2.20	2.17	2.00	2.00	30	49
	future	2.36	2.67	2.33	2.40	2.00	2.50	2.00	35	40
Growing interest in new wilderness areas as tourist attractions	present state	2.17	2.00	1.45	2.61	2.63	2.50	2.00	31	65
	future	2.42	1.83	1.64	2.94	2.75	3.14	2.50	41	52

Awareness of benefit from ample forest cover for prevention of natural hazards	present state	2.59	2.50	2.25	2.67	3.00	2.50	2.00	55	43
	future	3.09	3.00	2.92	3.38	3.13	3.43	2.50	72	23
Changes in forest composition related to climate warming	present state	1.93	1.83	1.69	2.38	1.83	2.75	2.00	19	70
	future	2.55	2.50	2.31	3.29	1.80	2.00	2.75	40	45
Increasing interest in wooded areas in densely populated valleys to maintain ecological corridors and sources of oxygenation for citizens	present state	2.18	1.83	1.73	2.22	2.63	2.25	2.00	32	64
	future	2.64	2.33	2.17	2.88	3.00	3.29	2.25	53	43

2.4 Urbanisation processes

Alpine cities are becoming increasingly important in terms of economic and social development. Due to the concentration of population, services, infrastructure and economic performance, the Alpine cities provide comparatively attractive conditions for investment and innovation and act as economic focal points within the Alps. But in this respect, they are generally comparable with extra-Alpine cities and therefore have to assert their position in relation to the agglomerations outside the Alps.

In some areas, the expansion of Alpine agglomerations is strongly linked to the spatial problems arising from the limited availability of land in valleys and basins. Furthermore, urban expansion is also associated with negative environmental impacts such as the fragmentation of ecosystems, the loss of natural and semi-natural biotopes, the contamination of air, soil and water, as well as noise pollution.

In this context, urbanisation takes the form of a gradual step-by-step, or sometimes explosive, growth of agglomerations, leading to new spatial structures. Within the agglomerations, development of the core cities and surrounding suburban areas may differ. In addition, rural areas or local centres located outside the agglomerations enter into stronger interrelationships with the cities, making the former immediately more dependent on the latter for future development.

- Issues dealing with urbanisation processes have been considered in several theses.

For example, one thesis focused on the changes in settlement structure, proposing that *demographic trends would disadvantage traditional urban centres, while suburban areas located near transportation axes would tend to benefit from new settlement and economic development.* Most experts agreed with this statement, insofar as it underlines the results of unwanted urban development resulting from the lack of sound planning. But the experts also detected new trends, such as compact city or urban renewal policies, the latter being aimed at revitalising the city centres. For some experts, a major concern would appear to be those suburban areas which maintain a rural character and are less linked up to city centres.

Another thesis dealt with *conflicting gravitational forces, coming either from Alpine cities or from peri-Alpine metropolises*. The experts agreed on the growing political and economic influence exerted by outside metropolises, but suggested that this influence should not be overemphasized given that intra-Alpine migration remains much more important than emigration to outer metropolises. This demonstrates the potential influence of Alpine centres and their role within the regional circuits. Thus, the effect of gravitational forces on Alpine regions appears to be a major concern, regardless of the centres exerting such forces.

A further thesis focused on atmospheric emissions in the main Alpine valleys, a problem that affects the quality of life in these highly populated areas. It asserted that *pollution, increases in traffic and the risks of natural hazards will make these areas less attractive*. The experts agreed on the impact of pollution and traffic noise in urban areas, although noise affects all areas located near transit routes. The experts also stressed that domestic activities (heating, private cars) contribute more to unwanted emissions than economic activities (industries). Another cause mentioned for the decreasing attractiveness of highly populated areas was the indirect impact of urban expansion in the form of rising real estate prices. In contrast, they considered that the risks of natural hazards remain underestimated by city residents. In fact, they feel that there is a higher tolerance of air pollution, urban congestion and traffic problems, since residents tend to think more readily of the advantages of cities as attractive working places and as being close to natural landscapes or recreational opportunities, which tends to upgrade their subjective attractiveness.

A final thesis concerned changes in urban land use, asserting that *globalisation and stronger competition will exacerbate land use conflicts in favourable areas, such as the valleys, resulting in a loss of traditional landscapes and biodiversity, as well as increases in soil sealing and even pollution.* On this point, the experts expressed rather conflicting opinions, some arguing that the tensions (between industry-oriented uses, intensive agricultural practices, increasing residential land uses) already existed years ago and have resulted in landscape changes. At the moment, industrialised agriculture and increasing urbanisation processes do not necessarily mean further threats to the landscape and biodiversity. Nevertheless, the degree to which more intensive land use will alter the landscape will depend on subsidies and on the effectiveness of urban planning.

Assessments of second round theses dealing with urbanisation processes

Thesis	*The effects of demographic development result in changes in settlement structure. The losers are not only remote rural areas but also the traditional urban centres, while the winners are the areas along the main communication routes where settlement and economic growth stretch out along the valleys like 'urban fingers'.*	*Within the globalisation process, concentration or depopulation processes taking place in many Alpine regions result more from the gravitational forces of metropolises outside the Alpine region (Milan, Munich, Vienna, Zurich, etc) than from the forces exerted by inner-Alpine centres or from local factors. Thus, attempts to regulate the effects of these processes must increasingly take into account the dynamics stimulated by outside metropolises.*	*The drop in the quality of life is greater and more widely felt in more populated areas. Due to the increase in traffic, pollution and the risks of natural hazards, these areas will become less attractive.*	*Globalisation and stronger competition result in a more intensive use of land for industrial and residential purposes in the more favourable areas (valleys). This leads to a loss of traditional landscape and biodiversity as well as an increase in soil sealing and even pollution. At the same time, unfavourable areas are abandoned and regenerated by natural vegetation growth.*
Average assessment scores				
All countries	3.2	3.4	3.0	3.3
Austria	3.7	3.6	2.4	3.5
Germany	3.1	3.6	2.8	3.2
France	3.3	3.1	3.1	3.3
Italy	3.1	3.1	3.4	2.9
Slovenia	3.6	3.7	3.6	4.0
Switzerland	2.5	3.2	2.5	3.2
% of assessments				
Correct	43	58	34	51
Partially correct	41	29	36	38

Fairly incorrect	9	8	23	2
Incorrect	7	4	7	9

- Experts gave a positive assessment of most proposed phenomena related to urbanisation issues. However, among the phenomena investigated, the following did not elicit a majority of positive assessments: development of new service activities in city peripheries, loss of social cohesion in suburban areas (formally considered as a characteristic quality of these areas), creation of high-tech business parks in Alpine urban areas, and finally inclusion of Alpine areas in metropolitan commuter catchment areas. Even among these phenomena, however, variations were noted between countries. Thus, metropolisation processes may be observed within the Alps in France, but in the Alpine periphery in other countries. Moreover, French experts' assessments indicate that they consider that these processes have a positive impact both on agriculture, by helping maintain fertile soils, and on landscape aesthetics, an impact that is less marked in other countries where urbanisation processes do not have the same magnitude.

Experts assessments do not differ significantly, whether they concern present or future conditions, since urban pressures are already obvious. However, the increasing importance attached to some of the listed phenomena, namely the preparation of planning documents that include city peripheries, the loss of social cohesion in suburban areas, and inclusion of alpine areas in metropolitan commuter catchment areas, may be indicative of certain fears concerning the ability to control further urban expansion and related social changes.

The growing importance attached to the creation of high-tech business parks in Alpine urban areas may mean that experts consider these developments to be more likely to occur in urban areas in the future, even though until now this has not been obvious.

Finally, some experts supplemented the analysis by developing certain aspects that were not mentioned in the listed phenomena. For example, they felt that, whether urban expansion is stimulated by metropolises or is more endogenous, the main issues are related to the increase in commuter movements, given that the road infrastructure is used at the same time for transit traffic. They believe that the control of urban expansion depends above all on the efficient use of existing tools and instruments that are already provided for in planning documents. Other experts, reacting to certain phenomena such as the coalescence of traditional villages into suburban areas, indicated that they felt that social changes related to urban expansion processes are only partially concerned with rural versus urban lifestyles, since immigrants to urban areas essentially come from other cities.

Assessments of the relevance of phenomena related to urbanisation processes

Phenomenon	Temporal dimension of assessment	Average assessment scores							% of assessments	
		All countries	Austria	Germany	France	Italy	Slovenia	Switzerland	quite relevant or very relevant	of little or very little relevance
Further spread of urbanisation in sensitive areas (valleys slopes, flood expansion fields, etc)	present state	2.80	3.50	2.25	3.33	2.38	3.25	2.75	62	36
	future	3.07	3.33	3.00	3.63	2.14	3.14	3.25	68	26
Setting up of planning documents that include city peripheries	present state	2.98	3.80	2.75	3.11	2.75	3.25	2.75	66	30
	future	3.30	3.60	3.00	3.88	3.00	3.29	3.25	79	13
Development of new service activities mainly in	present state	2.70	2.83	2.86	2.29	2.43	2.67	2.33	40	38

cities peripheries	future	2.92	2.50	2.86	2.71	2.67	3.86	2.67	47	30
Difficulties in maintaining fertile soils for agricultural activities in urban areas	present state	2.86	2.83	2.30	3.33	2.86	2.25	2.75	60	32
	future	2.98	2.67	2.70	3.63	2.71	3.57	2.25	66	23
Uncontrolled urban sprawl with effects on landscape aesthetics	present state	3.07	3.50	2.50	3.56	2.88	2.75	3.00	74	23
	future	3.09	3.67	2.67	3.50	3.00	3.14	2.75	68	28
Coalescence of traditional villages into suburban areas	present state	2.73	2.50	2.50	3.00	2.86	3.00	3.00	53	40
	future	2.91	2.67	2.50	3.25	3.14	3.14	3.00	62	32
Loss of social cohesion in suburban areas	present state	2.44	2.67	2.17	2.78	2.57	2.00	1.75	36	60
	future	2.59	3.00	2.25	3.13	2.43	2.71	2.00	51	43
Increasing attractiveness of Alpine agglomerations for the extra-Alpine population (e.g. due to their attractive landscape)	present state	2.67	1.83	2.58	3.22	2.63	3.00	2.75	57	40
	future	2.91	1.83	2.58	3.56	2.86	3.57	3.00	66	30
Creation of high-tech business parks in Alpine urban areas	present state	2.40	2.33	2.09	3.13	2.57	2.50	1.75	36	53
	future	2.78	3.00	2.36	3.29	3.00	2.29	2.50	57	30
Inclusion of Alpine areas in metropolitan commuter catchment areas	present state	2.26	1.67	1.91	2.88	2.00	3.50	3.00	34	55
	future	2.85	2.67	2.45	3.43	2.50	3.00	3.50	61	28

2.5 Tourism sustainability

The Alps are regarded as the most frequented and most extensive recreation area in central Europe. Nevertheless, the importance of tourism in the Alps is - from an economic point of view – often overestimated. The highly developed tourist centres are concentrated in certain locations, where tourism dominates the entire local or regional economy thanks to suitable natural and infrastructure conditions (e.g. concerning sufficient snow cover). However, other regions have no tourism infrastructure at all or one that is poorly endowed and scattered in nature, and tourism is of little economic importance.

The whole tourism sector in the Alps faces immense pressure from competition at the international as well as inner-Alpine level. On the one hand, this results in tourism infrastructure being abandoned in locations that cannot compete. On the other hand, there is a constant process of spatial concentration and intensification of tourism supply. A positive impact of this situation is the resulting concentration of investment power and high visitor use rates, enabling tourism firms to follow the permanently changing and fastidious demands of the tourist. But it also leads to serious negative ecological and social impacts, as "over-development" tends to put pressure on the existing structures. This is why tourism is now tending to move in the direction of greater decentralization, even though activities like agro-tourism remain much less visible than the 'industrial' tourism sector.

- Theses concerning tourism dealt with the economic and environmental status quo of Alpine tourism, as well as the role of tourism in supporting local identity and culture.

One thesis asserted that *summer tourism would decline due to the economic situation, while at the same time there would be an increase in the demand for agro-tourism, although capacity limits are being approached*. Most experts rejected this thesis, for different reasons. They agreed on there being strong competition among holiday destinations, a situation that may result,

however, in a more diversified tourism offer in the Alps. They did not consider that all tourism facilities were under pressure as there are still tourism options in competition with the Alps. However, new developments in mass tourism would not be welcome, due to the environmental burden and the uncertainty of economic profitability. Thus the most promising developments should be sought in certain niche markets, such as hiking or agro-tourism. For this sector, most experts consider that capacity limits are not yet reached, although some bottlenecks exist due to the excessive fragmentation of the sector, the lack of professional skills, and, in some cases, difficulties in combining agro-tourism and farm activities. In the future, the benefits of developing so-called soft tourism options may be questioned, however, since if it became too popular it might lead to the same excesses as those already criticised in mass tourism.

Another thesis concerned winter tourism. In parallel with the previous thesis, it asserted that *mass 'industrial' tourism (skiing, snowboarding, etc.) defines the market and that soft tourism options (snowshoe, Nordic walking) would not be in the mainstream of tourism development*. Experts' assessments of this thesis differed widely. They agreed that there is fierce competition between mass winter tourism centres, and emphasised the need to balance the economic benefits with the environmental sustainability of winter tourism. With regard to environmental sustainability, some experts considered that any kind of winter tourism may have some negative impacts. However, industrial tourism has the advantage of concentrating these impacts. With regard to competition, experts considered that soft winter tourism options are developing in ski resorts as a response to changing demand and to compensate for the decreasing popularity of Alpine skiing. Thus both types of tourism may coexist.

A third thesis considered *the distribution of tourism incomes and employment opportunities, asserting that they only partially benefit local farmers and residents and therefore result in conflicts between tourism players and the local population*. Once more, there were mixed reactions from the experts. Most experts agreed that there are tensions between the benefiting and the non-benefiting groups, depending on their access to tourism employment and financial opportunities. But the real conflicts arise when big tourism investment groups act without consulting the local population. Other sources of tension mentioned by experts included the problem, in some areas, of seasonal employees working for very low wages and the rise in real estate prices making it difficult for the local population to find housing. On the other hand, the experts considered that in many cases residents were able to supplement their incomes through tourism since it provided opportunities to complement agricultural activities by renting accommodation or selling regional products.

Assessments of second round theses dealing with tourism sustainability

Thesis	*Economic stagnation in the countries formerly providing tourists to the Alpine region has resulted in a decrease in demand in health and recreation tourism in the summer. At the same time agro-tourism, which creates less added value, is experiencing an increase in demand but is already approaching its capacity limits.*	*In the major winter tourism areas, industrial tourism (skiing, snowboarding…) defines the market and results in the concentration of tourist flows, capital and seasonal employment opportunities, while soft tourism (hiking, snowshoeing or Nordic walking…) is considered more of a niche market and not in the mainstream of tourism development. This reinforces competition in the mass tourism market, with an increase in risks of environmental hazards.*	*Winter or summer tourism employment opportunities and incomes only partially benefit local farmers and residents. This lack of integration leads to conflicts between tourism players and the rest of the population*
Average assessment scores			
All countries	2.7	3.0	3.1
Austria	2.6	2.8	3.2

Germany	2.5	2.9	2.6
France	2.7	3.0	3.7
Italy	2.8	2.8	2.6
Slovenia	2.9	3.7	3.6
Switzerland	2.7	2.8	2.7
% of assessments			
Correct	20	34	43
Partially correct	40	43	26
Fairly incorrect	27	13	21
Incorrect	13	11	11

Several other theses also partially touched on tourism issues. Thus, in reaction to a thesis dealing with marginalisation issues, experts considered it unrealistic to think that agriculture would get financial support from the tourism industry to keep open spaces attractive for tourists. Another thesis dealing with urbanisation that drew positive responses from the experts concerned the role of cultural urban tourism opportunities and short-access leisure facilities in increasing the attractiveness of Alpine cities. A thesis concerning transport issues elicited praise for the advantages of soft transport options being adopted in tourism resorts. Finally, a thesis dealing with relations between tourism and cultural development, enabled experts to identify the conditions under which both could be mutually supportive.

- Experts were rather doubtful about the importance to be attached to the proposed phenomena listed. They did not really put any of the phenomena to the fore, with the exception of the development of innovative formula to meet rapidly changing tourism demands, which obtained a "correct" score. In comparison, other phenomena, such as the decrease in the number of visitors from distant areas and the concentration of agricultural subsidies in rural areas where tourism is very important, were considered by some experts to be either irrelevant or of minor importance. For example, they felt that the Alpine tourism industry is opening up to distant markets. The importance of soft tourism options (agro-tourism and cultural tourism) as an additional source of local income is not considered as an important phenomenon at the present time, with assessments being made for a mix of spatial scales (local, regional and entire Alpine area)

However, according to the experts, some phenomena will be more relevant or more important in the future, since they can be interpreted as possible responses to tourism issues that will be of greater significance in the future. Among these phenomena, for example, are efforts to control the over-use of high-value tourism sites, soft tourism options or better possibilities for financing environmental protection measures thanks to the economic potential of intensively used tourist areas. However, experts do not attach more importance in the future than at present to other phenomena such as new accommodation capacity created by local residents or the change in the origins of seasonal workers. Relations between tourism and local culture would also remain as ambiguous as at present, except in the mind of Swiss experts who consider that tourism helps increase the awareness of local culture and traditions.

Finally, it should be noted that some experts reacted negatively to the listed phenomena, arguing that they were not clearly linked to tourism sustainability issues concerning the concentration of tourism activities in certain intensively used areas, thereby creating imbalances, and on spatial planning and restrictions which would preserve tourism sites. They felt that the listed phenomena focused too much on holiday tourism, excluding every-day leisure activities, visits to second homes and even day trips for shopping. They insisted on the risks of the

"commoditization" of local cultures and on the negative impacts of tourism resulting from excessive competition between local operators who fail to coordinate their marketing effort. Some experts also mentioned urban planning issues and regulations and urban pressures as factors that could affect future developments in tourist resorts.

Assessments of the relevance of phenomena related to tourism sustainability

Phenomenon	Temporal dimension of assessment	Average assessment scores							% of assessments	
		All countries	Austria	Germany	France	Italy	Slovenia	Switzerland	quite relevant or very relevant	of little or very little relevance
Decrease in number of visitors from distant areas	present state	1.71	1.60	1.55	2.00	1.57	2.00	1.75	11	77
	future	1.83	2.20	1.45	2.17	1.71	1.86	2.00	21	64
New accommodation capacity created by local residents	present state	2.14	2.20	1.64	1.88	2.75	1.75	2.00	30	62
	future	2.34	2.40	1.55	2.67	2.88	3.00	1.75	36	51
Changes in origin of seasonal workers	present state	1.99	1.67	1.88	1.75	2.71	2.50	2.00	23	60
	future	2.41	1.83	2.13	2.60	3.00	2.43	2.50	41	39
Development of innovative formula to meet rapidly changing tourist demands	present state	2.67	2.67	2.77	2.13	2.71	3.75	3.00	55	40
	future	3.30	3.00	3.38	2.86	3.29	3.57	3.75	89	4
Concentration of agricultural subsidies in rural areas where tourism is very important	present state	1.88	1.00	1.83	2.17	1.75	1.25	1.25	21	64
	future	2.15	1.33	2.17	2.50	2.14	2.71	1.25	30	53
Efforts to control over-use of high-value tourism sites	present state	2.26	2.83	1.64	2.29	2.75	2.50	1.75	34	57
	future	2.88	3.17	2.45	3.29	3.00	3.00	2.50	60	32
Reduction of negative environmental effects due to abandoning of areas unfavourable for further tourism development	present state	2.03	2.20	1.90	1.86	2.00	3.00	2.00	24	61
	future	2.44	2.60	2.00	2.86	2.14	2.43	3.00	44	42
Excessive use of drinking water in tourism agglomerations	present state	2.28	1.33	2.10	3.00	2.25	2.25	2.00	36	55
	future	2.63	1.50	2.10	3.69	2.57	3.43	2.25	51	38
Increasing importance of soft tourism options (agro-tourism and cultural tourism) as an additional source of local income	present state	2.44	2.17	2.17	2.38	2.88	2.75	2.00	38	57
	future	2.80	2.17	2.77	2.29	3.25	3.43	2.75	57	38
Better possibilities for financing environmental protection measures thanks to economic potential in intensively used tourist areas	present state	2.02	1.83	2.00	2.00	2.25	2.25	1.00	28	66
	future	2.64	2.83	2.38	2.29	2.86	3.29	2.25	62	32
Strengthening of local culture and traditions due to increased awareness of their value in tourist areas	present state	2.20	1.67	1.92	2.36	2.63	3.67	2.33	27	65
	future	2.64	2.17	2.31	2.67	2.86	3.00	3.67	49	40

2.6 Transport pressures

Transport issues have attracted attention for a long time, since traffic has steadily increased over recent decades in spite of incentives to encourage the use of public transport and soft transport options. In addition, solutions to reduce traffic flows must be taken at EU level and may conflict

with other issues. Transport issues will be focused on in the next Alpine State report, produced by the AC and currently in preparation.

Even if transit traffic represents but a small percentage of total Alpine traffic flows, its concentration along a few supra-regional and supra-national corridors (crossroads) has to be seen as a unique phenomenon in Europe. The functional interconnections of the Alpine economy with extra-Alpine and global markets will become more intense in the future, leading to further increases in the demand for transport. In this context, future infrastructure development is expected to be part of the European transport policy, which aims to strengthen the international transport links with the eastern European countries.

The quantity and negative effects of inner-Alpine traffic are often underestimated in relation to trans-Alpine traffic. Due to increasing individual mobility and changing tourist habits and demands (shorter stays, more frequent stays), the volume of internal Alpine traffic is also growing. As traffic infrastructures are well developed on the main transit corridors, traffic induced by tourism and leisure activities as well as internal Alpine traffic add to the supra-regional transport flows. Consequently, both the population and the environment in these regions suffer considerably from the impact of high traffic densities.

This is why the main issue concerns the development of passenger and freight transport on the main Alpine transit corridors (rail and road transport) and the impact on the environment (especially noise and air pollution), economy (establishment of firms along the corridors) and society in the vicinity of the transport corridors, as well as on inner-Alpine movements related to tourism and leisure activities.

- As the increasing pressure from transport is considered a major issue for the Alps, three theses were put forward to elicit discussion on it. The issue was also touched on in examining other theses.

The first of the three theses focused on the possibilities of encouraging more frequent use of public transportation. It asserted that *changes in favour of public transportation are not apparent, in spite of incentives to promote public transport systems*. Apart from the Swiss experts, whose country enjoys a wider audience for its public transport systems, most experts agreed at least partially with this thesis. On one hand, they argued that private transportation will increase as people tend more and more to live, work and relax in different places, and as the quality of public transport is not in line with expectations or demand. On the other hand, they consider that the promotion of public transport is a long-term process. For passenger transport, it can only be organised in wide valleys but not in the whole Alpine area. For goods transport, improved competitivity is expected from large railway projects, but containing the pressures resulting from increases in freight transit or internal traffic would call for further measures, such as higher fees or incentives to reorient traffic to freight trains.

A second thesis concerned the effects of rising oil prices. It asserted that *substantial increases in oil prices would reduce mobility and lead to further concentrations in densely populated areas*. Most experts rejected this assertion. The experts consider that there is a low elasticity between petrol prices and private mobility. Higher prices would tend to reduce traffic on the main transit routes rather than internal traffic, which results, above all, from changes in the settlement structure within the Alps. They argue that higher petrol prices will stimulate innovative, less fuel-hungry technologies or strengthen the development of public transport and alternative solutions (bike, car sharing). Nevertheless, there will be no significant impact on private mobility in any areas where residents are not self-sufficient enough to meet their everyday needs.

The third thesis focused on new technologies that could reduce the pollution caused by transport. It asserted that these *new transport technologies could be more extensively used,*

since they are connected with suitable infrastructure, but would not solve other problems (noise, landscape fragmentation). Most experts agreed with this thesis, but qualified the positive effects of the development of these new technologies. They cannot be regarded as an all-purpose panacea, since they may not be applicable in mountain areas. Thus, the problem of land consumption for traffic infrastructure calls for a reorganisation of existing infrastructure, which is concentrated along the valleys, and, above all, for restrictions on road traffic.

Other theses, focusing on other main issues, also helped to provide input on certain transport issues. For example, good accessibility is a prerequisite to avoiding further marginalisation of peripheral rural areas, since basic services are increasingly supplied from outside the local area. In addition, major transit routes run across some of these areas, and less attention is paid to noise pollution here than in more central areas. Similarly, a prerequisite to attracting new manufacturing activities is above all easy access by road. Increases in traffic can also be seen as a consequence of 'just-in-time' production methods. It is uncertain that new forms of communication, with the help of IT, will reduce traffic associated with these economic activities.

Assessments of second round theses dealing with transport pressures

Thesis	*The attitude that people have towards private transportation is not changing in favour of greater use of public transportation for either internal Alpine traffic or transit traffic. Changes are not apparent in spite of all incentives to promote public transport.*	*The price of petrol is rising and may exceed USD100 per barrel in the near future, causing a huge reduction in mobility. This reinforces the depopulation of remote areas and may even slow down processes of sub-urbanisation, as these trends provoke a concentration of traffic in the main valleys and densely populated areas.*	*On one hand, development in new transport technologies (e.g. hydrogen, electrical cars, and hybrid technologies) is resulting in them being used more extensively thanks to suitable infrastructure, which enables a considerable reduction of air and noise pollution. On the other hand, problems related to the consumption of land for traffic infrastructure and those concerning landscape fragmentation cannot be solved efficiently.*
Average assessment scores			
All countries	3.0	2.5	3.1
Austria	2.8	2.5	2.8
Germany	3.4	2.4	3.4
France	3.1	3.0	3.0
Italy	3.3	2.4	3.3
Slovenia	3.3	3.4	2.7
Switzerland	2.2	1.3	3.3
% of assessments			
Correct	38	18	40
Partially correct	36	36	38
Fairly incorrect	21	27	18
Incorrect	4	20	4

- Since the best known and most obvious phenomena were left out of the list of phenomena assessed by the experts, most of those that were listed were considered by the experts to be of minor importance at the present time, as they are not really apparent yet. Only one phenomenon, the increasing pollution in steep-sided valleys on transit routes, was considered as important by a majority of experts, while there was a balance between positive and negative assessments of the importance attached to the efforts to limit traffic flows in sensitive areas.

Differences observed between the different time periods considered indicate that some phenomena, in certain cases, are to be considered as emerging phenomena, the signs for which are already more or less obvious, while other phenomena, although they will become more important in the future, relate to trends that may only become more significant in an indeterminate future and are thus to be "kept in reserve".

Examples in the first category include efforts to limit traffic flows in sensitive areas, decreasing the negative effects of transport by extending the railway transport network, the development of alternatives to the private car, or even the internalisation of transport prices by increasing transport taxes and fees. Most experts consider that these phenomena will be more important in the future than they are at present. Phenomena referred to in the second category would concern changes in the modal split for travel to work, or the development of transport-saving options to meet current needs, which would require more radical changes in attitudes towards mobility, changes that appear unlikely in the foreseeable future.

Experts also insisted on certain difficulties in dealing with important transport issues, such as the lack of European-wide EU regulations on traffic flows, limited or lacking public budgets, or the lack of coordination between public transport operators. They mentioned crucial factors such as the control of urban sprawl, transit traffic and the development of second homes which are all prerequisites for alleviating transport pressures in the Alps.

Assessments of the relevance of phenomena related to transport pressures

Phenomenon	Temporal dimension of assessment	Average assessment scores							% of assessments	
		All countries	Austria	Germany	France	Italy	Slovenia	Switzerland	quite relevant or very relevant	of little or very little relevance
Increase in pollution in steep-sided valleys on transit routes	present state	3.13	3.50	2.85	3.33	3.00	3.50	3.50	81	19
	future	3.39	4.00	3.15	3.50	3.13	3.43	3.50	81	17
Efforts to limit traffic flows in sensitive areas	present state	2.54	3.17	2.33	2.13	2.88	3.00	2.50	47	51
	future	3.14	3.33	2.92	3.13	3.29	3.29	3.00	74	19
Decreasing negative effects of transport by extension of railway transport network	present state	2.27	2.50	2.00	1.86	2.75	2.50	2.50	36	57
	future	2.64	2.50	2.54	2.86	3.13	2.29	2.50	53	43
Internalisation of transport prices by increasing transport taxes and fees	present state	2.21	2.33	2.09	1.86	2.50	3.00	2.50	38	51
	future	2.93	3.00	3.00	3.00	3.13	2.00	3.00	60	28
Development of alternatives to private car (train + bike, car sharing, regional transport cards, etc.)	present state	2.22	2.33	2.08	2.33	2.63	3.00	2.00	34	62
	future	2.81	3.33	2.54	2.88	3.29	2.17	3.00	64	28
Changes in modal split for travel to work	present state	2.14	2.00	2.10	2.33	2.50	2.50	2.00	23	68
	future	2.64	2.50	2.56	3.11	2.88	1.71	2.50	49	40
Adaptations in vehicles to reduce GHG emissions	present state	2.30	2.17	2.45	2.11	2.86	2.75	2.00	34	60
	future	2.84	2.67	3.08	2.67	3.29	2.43	2.75	64	32
Development of transport-saving options to meet	present state	1.75	1.33	1.55	2.33	1.88	2.00	1.33	15	79

current needs (e-commerce, IT)	future	2.47	1.83	2.18	3.33	2.71	2.29	2.00	45	47

2.7 Innovation and competitive economic activities

This main issue focuses on the overall development of old and new economic sectors (except tourism) in the Alps, its dependence on social, environmental, technical, infrastructure and political conditions and on questions concerning the extent to which the Alps are developing toward a self-contained economic area.

In certain valleys and basins of the Alps, agriculture enjoys favourable production conditions similar to those found outside the Alps. This has enabled an 'industrialised' agriculture to develop, characterised by a high level of specialisation and the prospects of a good economic return. However, it is not very labour-intensive, so does not provide many jobs. As for its environmental impacts, industrialised agriculture in the Alps does not really differ from agriculture outside the Alps. Land-use conflicts may be more serious, however, because of the high concentration of different demands for land in the Alpine valleys and basins.

Historically, industry has played a prominent role in the economic development of the Alps. During the 19th and 20th centuries, nearly all large and easily accessible longitudinal valleys in the Alps were developed for industry. Today, several of the region's former advantages (such as labour surpluses, direct access to hydropower and mineral resources) are no longer decisive location factors for modern industry. Nevertheless, trade and industry has remained an important and often underestimated part of the Alpine economy. This is why crises relating to industrial development have serious consequences for the economic stability of Alpine regions.

A major problem concerns the dependency of many firms established within the Alps on company headquarters located outside the Alps. Thus, there is always the risk of Alpine branches being abandoned in the event of economic crises. New perspectives have also opened up for changes in entrepreneurial behaviour. Given that modern enterprises are increasingly independent of considerations relating to the distance to market and the transport of materials, relatively remote locations may now appear more attractive, e.g. for consulting and service enterprises, such as highly specialised component suppliers. Developing these perspectives depends primarily on the innovative potential of the Alpine regions and on the capacity of Alpine firms to seize new development opportunities in line with global market orientations.

- Second round theses focused mainly on the comparative advantages and drawbacks of the Alpine region for attracting and developing modern economic activities.

Two theses concerned the evaluation of the Alpine resource potential in promoting and enhancing economic development. The first thesis was focused on energy production, asserting that, *apart from the important hydro-electrical potential, which has been already evaluated, opportunities to develop other clean energy options are hindered by continual increases in energy imports*. Most experts rejected the thesis as it was formulated, arguing that the Alps cannot be regarded as a separate entity, since Europe is a coherent energy network where imports of fossil energy or nuclear power provide cheap solutions to meet demand. At the moment, Alpine hydro-electrical energy is used mainly in peak periods. Renewable energies are provide decentralist solutions which could be implemented in the Alps but which are less competitive than other energy sources. Thus, the rising price of oil may lead to more emphasis on the development of alternative solutions, but this will depend above all on political decisions. However, some experts observed that it can cause severe conflicts with movements to protect the natural environment or landscape, although biomass is considered as a suitable energy source.

The second thesis considered that *in a context of a crisis in the Alpine economy, natural resources (landscape, clean water and air) would not be recognised or valued as opportunities to attract new economic activities*. Most experts were rather critical of this thesis, arguing that the main location factors are the connection to good transport networks, construction and environmental regulations, wage levels, labour legislation and educational levels, factors with which the Alps are not particularly well endowed. Development in service activities will not depend on resources which are available in the Alps; even modern activities prefer the benefits of concentration in innovation zones, and will not easily locate in remote areas. Another reason for rejection of the thesis is that local resources have either already disappeared (mining industry), or are used in agriculture, energy or tourism, so that the question is more one of how to imagine new opportunities for developing these activities further.

A third thesis envisaged complementarities and competition with outside areas. It asserted that *the Alps could develop new activities since they would reinforce functional complementarities with outside areas and create more added value, without competing with activities carried on outside*. Although some experts rejected this thesis, it was generally accepted, in spite of divergences in opinions concerning the links between the Alpine economy and other economic areas. The Alpine space cannot be viewed as completely disconnected from extra Alpine areas, but it is first and foremost strongly differentiated. For regions close to internal or extra Alpine agglomerations, the strategy of economic complementarities may be promising, but this is not suitable in peripheral areas which have to seek more autonomous forms of development, such as that based on competitive niche products, and need assistance. However, some experts considered the Alps to have a strong position in specific fields oriented towards the 'global market', based on the Alpine resources (year-round skiing) or even on innovation and research. Moreover, the quaternary sector and the development of IT may, to a certain extent, increase the competitiveness of the Alpine area.

Assessments of second round theses dealing with innovation and competitive economic activities

Thesis	*Energy production in the Alps is still mainly based on the hydro-electrical potential, whereas consistent increases in energy imports, even from outside Europe, limit opportunities to develop other clean energy options (e.g. biomass fuel, photovoltaic, solar, geothermic) in the Alps.*	*There is a paradox between the current crisis in the Alpine economy and the existence of highly valuable resources (e.g. landscape, clean water and air) for modern industry and service activities in the Alpine area. These resources are not recognized or even valued as opportunities to attract new economic activities which would meet with sustainability requirements*	*The Alps are in general interdependent with outside areas for economic activities. They have developed functional economic complementarities with these areas, e. g. in terms of recreation services, drinking water supply or even energy production. The Alps are well placed to develop new activities which would create more added value, as long as these activities complement and do not compete with those conducted outside.*
Average assessment scores			
All countries	2.5	2.6	3.3
Austria	2.7	2.0	3.2
Germany	1.8	2.2	3.0
France	3.0	3.5	2.8
Italy	2.4	2.8	3.9
Slovenia	2.7	3.4	3.9
Switzerland	2.5	2.0	3.2
% of assessments			
Correct	16	26	58
Partially correct	30	35	25

Fairly incorrect	36	16	13
Incorrect	18	23	5

➢ There was, in some cases, a balance between opinions considering the investigated phenomena to be of major importance and those considering them to be of minor importance, whereas in other cases, the latter predominated. This was the case for innovative potential in agriculture due to a combination of traditional and modern forms of production, greater integration of agricultural activities in the food processing industry, and above all for the decrease in entrepreneurial participation among the Alpine population, which four experts considered as an irrelevant phenomenon, while ten experts had no opinion about it at all.

These opinions can be interpreted as indicative of on-going changes in economic activities, where 'innovation' or niche activities are playing an important role in comparison with traditional activities. This is the case even when these aspects are not very evident at the present time, since the experts feel, for example, that at the moment the Alps are not really engaged in high tech activities.

In contrast to the present situation, these changes would have significant effects in the future, so that related phenomena are to be considered. Examples of such phenomena are the increasing proportion of 'clean industries' and businesses, and the concentration of highly innovative activities in already favoured areas, which would not be in contradiction with another phenomenon, that of diffusion or spreading effects from the main innovation centres.

Assessments of the relevance of phenomena related to innovation and competitive economic activities

Phenomenon	Temporal dimension of assessment	Average assessment scores							% of assessments	
		All countries	Austria	Germany	France	Italy	Slovenia	Switzerland	quite relevant or very relevant	of little or very little relevance
Decrease in industrial emissions due to the closing down of 'dirty industries'	present state	2.24	2.17	1.92	2.13	2.75	2.25	2.25	38	57
	future	2.05	1.50	1.55	2.38	2.25	2.57	2.25	34	60
Increasing proportion of 'clean industries' and businesses (especially IT firms)	present state	2.28	2.17	2.00	2.13	2.75	2.25	2.50	38	60
	future	2.67	2.33	2.23	3.00	3.00	3.29	2.25	62	36
Concentration of highly innovative activities in already favoured areas	present state	2.58	2.33	2.36	2.89	2.63	3.25	2.75	49	47
	future	3.02	2.67	2.80	3.25	2.75	3.57	3.25	74	17
Innovative potential in agriculture due to combination of traditional and modern forms of production	present state	2.18	2.33	2.00	2.43	2.25	2.00	2.00	32	62
	future	2.50	2.17	2.23	3.29	2.57	2.71	2.00	51	43
New opportunities to develop niche activities	present state	2.54	2.50	2.33	2.50	2.88	2.50	2.25	49	46
	future	2.98	3.00	2.50	3.14	3.50	3.29	2.50	70	23
Competition between municipalities to attract new firms	present state	2.63	2.40	2.69	3.06	2.57	2.25	2.25	49	45
	future	2.83	2.40	2.67	3.57	3.00	2.86	2.25	53	36
Diffusion effects from main innovation centres	present state	2.51	2.17	2.56	2.58	2.50	3.00	2.75	40	45

	future	2.82	2.33	2.67	3.20	3.00	2.86	3.00	57	23
Decrease in entrepreneurial participation among the Alpine population	present state	1.94	2.00	1.57	2.00	1.88	2.50	2.50	11	66
	future	1.97	2.60	1.86	1.67	1.75	1.86	2.50	19	60
Growing importance of external (extra-Alpine) investments in developing new activities	present state	2.42	2.00	2.18	2.71	2.50	3.75	3.00	40	51
	future	2.72	2.00	2.50	3.00	2.86	2.71	3.75	60	32
Greater integration of agricultural activities in food-processing industry	present state	2.28	2.17	2.17	2.57	2.57	2.50	2.00	32	60
	future	2.51	1.80	2.58	2.57	2.83	2.57	2.50	50	39
Increase in supports to SMEs and assistance to local firms	present state	2.49	2.67	2.33	2.57	2.75	1.50	1.67	43	50
	future	2.60	3.00	2.58	2.71	2.71	2.71	1.50	51	40
Involvement of local governments in economic development projects	present state	2.43	2.50	2.36	2.50	2.75	2.75	1.75	43	51
	future	3.02	2.67	2.80	3.14	3.57	3.14	2.75	70	17

Another trend revealed by differences between experts' assessments of the present situation and the future is the growing importance of economic relations, and even interdependence, with other regions in the future. Although some experts feel that support to local SMEs should not be neglected, a majority believe that more attention should be paid to the growing importance of external (extra-Alpine) investments in developing new activities, as well as to the involvement of local governments in economic development projects that are capable of seizing any opportunities arising from increasing interdependence. This is why, in this context, for some experts, the lack of entrepreneurial spirit in the Alps would not be a serious disadvantage.

Some experts raised questions concerning the level of high quality and well paid jobs in the Alps. Since traditional activities are still of considerable importance in the Alpine region and are not able to adapt quickly to changes, innovative and clean industrial activities tend to be found mainly outside the Alps.

Other remarks concerned specific financial subsidies for mountain regions which would make it possible for them to develop autonomously and thus limit the negative economic effects of depending too much on global market forces.

2.8 Maintenance and development of natural and cultural resources

The awareness of the value of the natural and cultural heritage of the Alpine region, the demand for a high quality environment and the realisation that there are contradictions with attitudes that consider nature as a commodity product, have tended to increase sensitivity to the risks of environmental degradation. A variety of negative impacts on the environment are mentioned.

For example, there is the deterioration of fauna and flora resulting from changes in the overall ecosystem, involving shifts in the limits of vegetation zones, loss of the natural dynamics of species in their living space, and the destruction of their habitats. Man is largely responsible for this situation, brought about by the building of structures that become geographical barriers to migrating species or, more generally, through human activities that result in strong pressures on sensitive areas, e.g. use of some protected or wild areas for tourism and recreation purposes. Thus a lack of education, at all stages in life, to promote greater respect for nature and the environment is a major issue.

As regards the landscape, the immediate causes of degradation are more obvious. Changes in land use and landscape aesthetics are due, above all, to a reduction in agricultural activities, irregular and uncoordinated shrub reforestation, overbuilding in tourism resorts and scattered developments in rural areas. These changes result in the disappearance of the rural landscape, which was the traditional reference and for which there is no substitute.

In reaction to these trends, there is a growing awareness of the flimsiness of both the natural and the cultural heritage, and a greater assessment of the potential role of these assets in the sustainable development of the Alpine region. However, protective measures may lead to conflicts of interest, so that it is important to find solutions that will ensure a balance between development expectations and maintenance of the original values of the Alpine region. In fact, these efforts call for innovative solutions based on the belief that the Alpine heritage is neither static nor to be "museumified", but instead is capable of evolving in line with residents' aspirations to live in a quality environment while at the same time taking advantage of any opportunities provided by the modern world.

- This main issue encompasses, in fact, a lot of different sub-issues analysed in various theses. These sub-issues focused mainly on social aspects, taking into account the maintenance and even development of the cultural heritage of the Alps, while issues specifically concerning nature conservation and natural resources were mentioned in other theses.

One thesis asserts that the *main threats for the preservation of the cultural heritage and its diversity are the loss of local identity and the standardisation of lifestyles, both of which are consequences of migration processes and an ageing population*. Most experts agreed on the statement that lifestyles have changed over time and are increasingly influenced by global rather than local references, so that local identities are disappearing. However, some experts do not see the process of assimilation of lifestyles as necessarily negative, since it may lead to a renaissance of values more in line with contemporary society, its fears and expectations. This is why they consider that immigrants can also enrich and diversify the cultural heritage, by recreating social links, for example, or bringing innovation to rural areas. Other experts focused on efforts to maintain local identities, through involvement in local associations or other initiatives such as museums or the use of dialects in school books.

Another thesis asserts that *tourism is a chance to preserve cultural diversity and traditional land use forms, and to find solutions to reconcile respect for local identities and the development of new cultural references*. Most experts agreed on this thesis, as long as it concerns soft tourism and not mass tourism, arguing that cultural identity is an important location factor for tourism and that its assessment by outsiders can make local populations more conscious of their own cultures. However, they consider that in areas of mass tourism, changes in culture and traditional land use are more intense and there is a danger that tourism may encourage commoditization rather than conservation of the culture. Finally, they argue that tourism can contribute to a higher living standard which may improve the conditions for preserving cultural identity. However, they also point out that preserving cultural diversity and increasing tourist awareness of local cultures requires the combined efforts of the various social players and educational system, and considerable innovative capacity.

A final thesis focused on the role of social and cultural heterogeneity in promoting innovative initiatives. It asserted that *the presence of traditional and more modern groups has great potential for innovative initiatives, the implementation of which calls for communication and participation at the local level*. The experts agree that cultural heterogeneity is a great potential asset, but argue that innovation may be triggered more by the pressure of global change phenomena and financial incentives. Social coherence and participation processes are considered to be of increasing importance in the acceptance of innovations introduced by

individuals or institutions, as long as initiatives do not lead to serious conflicts of interest. Some experts focus on the potential for innovations to enhance social coherence and quality of life. Others focus on initiatives in terms of marketing that would help the Alpine region to compete on the global market and call for a pooling of these initiatives on a supra-regional level.

As for the issues concerning nature conservation and natural resources touched on in other theses, these are expressed mainly in terms of maintaining a balance between different land uses (intensive and extensive agriculture, forests, nature conservation areas) in all Alpine regions or in terms of increasing the awareness of the sensitivity of Alpine ecosystems, namely through continuing education. Some experts pointed out that 'nature' and 'biodiversity', as well as 'mountain', are already common values attached to Alpine identities that will refer less and less to any particular locality. Certain experts even considered that increasing the awareness of these values requires a real shift in urban-rural relationships, making them less one-sided.

Assessments of second round theses dealing with maintenance and development of natural and cultural resources

Thesis	*For the preservation of the cultural heritage and its diversity, the main threats are the loss of local identity (dialects, spiritual values, customs, etc.) and the standardization of life styles, both of which are a consequence of ageing and migration processes (abandonment of rural areas, concentration of the population in cities, influence of foreign immigrants)*	*Tourism can be seen as a chance to preserve cultural diversity and traditional land use forms, and as an opportunity to find solutions to reconcile respect for local identities with the development of new cultural references*	*The heterogeneity of the different social groups (traditional and more modern groups) in the Alpine space has great potential for innovative initiatives. To exploit this potential requires communication and participation at the local level to promote an exchange of ideas and visions for the future.*
Average assessment scores			
All countries	3.1	2.6	3.3
Austria	3.0	2.3	3.1
Germany	2.9	2.5	2.8
France	3.2	2.4	3.3
Italy	3.3	2.7	3.5
Slovenia	3.9	2.3	3.7
Switzerland	2.5	2.6	3.2
% of assessments			
Correct	43	43	54
Partially correct	34	35	22
Fairly incorrect	16	15	17
Incorrect	7	7	7

- Experts' assessments of the importance of phenomena vary somewhat. The development of environment-friendly agricultural techniques (organic farming, etc.) or the participation of the local population as actors in cultural events are considered to be more important phenomena than those relating to local and other cultures, such as courses and educational programmes oriented towards local cultures and traditions or the participation of local associations in actions in other mountain regions. A balance was observed between the diverse opinions concerning other phenomena related to natural heritage and resources, such as measures regulating the consumption of space.

According to the experts' opinions, the importance of most listed phenomena will increase in the future. Experts' assessments became more unanimous concerning the importance of certain phenomena in the future, such as the maintenance of a network of open spaces in valleys and densely populated areas or the implementation of water quality management programmes.

However, listed phenomena relating to local and other cultures do not seem to gain radically in importance when considered for the future.

Given that the listed phenomena relating to culture were considered by certain experts to be of minor importance or not linked to important issues, comments often suggested other aspects for analysing cultural issues. For example, some experts evoked the acceptance by the local population of traditions, as shown in tourism events. This raises questions about education and the development of a greater awareness of local culture, ideas that are not necessarily shared by Alpine residents, especially newcomers who arrive with new cultural customs. Finally, some experts felt that cultural issues should not be dissociated from natural heritage conservation issues, in that local traditions and lifestyles, and even new customs, should be appreciated in terms of their respect for natural heritage values.

Assessments of the relevance of phenomena related to maintenance and development of natural and cultural resources

Phenomenon	Temporal dimension of assessment	Average assessment scores							% of assessments	
		All countries	Austria	Germany	France	Italy	Slovenia	Switzerland	quite relevant or very relevant	of little or very little relevance
Development of environment-friendly agricultural techniques (organic farming, etc.)	present state	2.70	3.17	2.38	2.78	2.75	3.25	2.50	60	40
	future	3.15	3.33	2.54	3.50	3.50	3.29	3.25	79	19
Maintaining a network of open spaces in valleys and densely populated areas	present state	2.64	2.67	2.38	3.29	2.29	3.25	2.50	47	47
	future	3.14	3.50	2.83	3.33	2.86	3.43	3.25	72	17
Measures regulating consumption of space	present state	2.77	3.17	2.69	2.67	2.88	2.25	2.00	53	47
	future	3.20	3.83	2.92	3.50	3.13	3.43	2.25	77	21
Implementation of water quality management programmes	present state	2.61	2.33	2.75	2.78	2.86	2.75	1.67	46	50
	future	3.23	3.33	2.92	3.63	3.29	3.43	2.75	87	6
Participation of local population as actors in cultural events	present state	2.67	2.83	2.75	2.33	3.13	2.50	2.00	60	38
	future	2.70	2.83	2.54	2.50	2.88	3.00	2.50	64	34
Courses and educational programmes oriented towards local cultures and traditions	present state	2.14	1.83	2.36	1.67	2.50	3.00	2.67	26	68
	future	2.55	2.67	2.33	2.13	3.00	2.57	3.00	47	47
Involvement of non or new residents in local associations	present state	2.26	2.33	2.00	2.50	2.63	2.00	2.00	38	60
	future	2.49	2.67	2.15	2.71	3.00	2.43	2.00	49	47
Participation of local associations in actions in other mountain regions	present state	1.96	2.00	1.54	2.11	2.38	2.25	1.75	28	72
	future	2.30	2.00	1.69	2.75	2.88	2.57	2.25	45	53

2.9 Climate change effect

The intricate topography of mountain environments complicates weather patterns and is a challenge for climate models, making it more difficult to project the specific impact of climate change in these regions. Nevertheless, it is clear that climate change will add to current stress

factors in the Alps and that its impact in the region will not be the same as outside the Alps, given the specific characteristics of the Alpine environment and economy.

This major issue relating to the effects of climate change focuses on the possible impacts of climate change on both man and the Alpine biosphere. This means that the frequently discussed predicted changes in temperature and precipitation regimes are not the prime concern here, but rather the ecological, economic and, in part, social consequences of these changes.

More frequent and more intense hazardous events will have significant impacts, for example, on the economy and settlement structures. But less obvious changes in natural conditions may influence the economy in an even more serious way. For example, rising temperatures, shorter periods of snow cover and declining soil stability could have serious implications for the skiing industry. Drier conditions, especially in summer, would undermine energy and water supplies, while general melting of the permafrost layer would make the ground less firm and could result in difficulties for existing transport and housing infrastructures.

- No thesis focused on climate change, but it is obvious that climate change will have significant consequences which should be taken into account in the future development of the Alpine region, in spite of the fact that all these consequences cannot necessarily be foreseen at the moment. Nevertheless, through an assessment of several theses, the experts pointed out certain issues that can be related to climate change.

For tourism, for example, climate change may lead to increasing pressure on higher altitudes for the development of ski areas and, in turn, to the loss of jobs in lower altitude ski resorts. Moreover, a decrease in the number of areas assured of winter snow cover could mean that a greater effort will be required to prepare ski runs. A decline in skiing in lower altitude resorts may also result in fewer areas offering summer activities.

For agriculture, increases of carbon dioxide related to climate change could affect mountain pastures in particular and result in further weakening of the competitiveness of mountain agriculture.

For landscapes and biodiversity, climate change could result in changes in species diversity and composition, especially in summit areas. Mountain species may be replaced by more competitive but less resistant species, resulting in increased vegetation damage. More generally, according to the experts, climate change would increase the risk of natural hazards (landslides, mudflows and flooding) due to greater quantities of water from melting glaciers and the predicted more frequent intensive rainfalls.

- Experts did not consider that many of the listed phenomena were particularly important at the present time. Even higher risks of natural hazards (landslides, mudflows and floods) or higher pressure from winter tourism on protected areas at higher altitudes, which might have been expected to be considered important, did not elicit a overwhelming majority of positive assessments.

Thus, the long term effects of climate change, illustrated through some of the listed phenomena, such as changes in species composition and diversity, increased damage to vegetation due to storms and snow loads, or difficulties in obtaining high quality water supplies or energy supplies due to the lack of water, did not appear to be of major importance at the present time. Difficulties regarding high quality water supplies and energy supplies were not even considered to be relevant by three experts. However, the experts generally attached greater importance to more restrictive regulations for building in areas exposed to risks of natural hazards, to the further development of energy-saving options for transport and housing, and to greater investment in GHG-reducing technologies, given that these phenomena concern the possible effects of climate change on human activities, about which the experts are more sensitive.

In contrast to the limited importance experts attached to the listed phenomena in their present state, these same phenomena were attributed more importance in the future. This applied to phenomena related to effects on the environment as well as those related to effects on human activities and, for the future, assessments often referred to the entire Alpine region. This is why we may consider that most listed phenomena are emerging phenomena, some of which will have effects only in the long run, while others could prove significant in the next few years, especially those related to human activities.

Among the comments received, certain concern the period which is to be taken into account, since some experts think that foreseeable effects will not be obvious before 10 to 20 years. Other comments suggest taking into account, through analyses of various phenomena, the causes of climate change (for example, behaviour, increases in air emissions, etc,) rather than the environmental consequences. Finally, some experts suggested considering emblematic phenomena, such as the melting of glaciers or permafrost soils, or the use of snow cannons, as a means to approach climate change issues.

Assessments of the relevance of phenomena related to climate change effects

Phenomenon	Temporal dimension of assessment	Average assessment scores							% of assessments	
		All countries	Austria	Germany	France	Italy	Slovenia	Switzerland	quite relevant or very relevant	of little or very little relevance
Changes in species composition and diversity due to migration, especially in summit areas	present state	2.21	2.17	2.23	2.38	2.20	2.50	2.00	28	62
	future	2.80	3.00	2.83	3.29	2.40	2.50	2.50	60	26
Changes in species composition and structure of forests	present state	2.21	2.33	2.31	2.25	2.00	2.50	2.00	28	62
	future	2.83	3.00	2.75	3.36	2.25	2.83	2.50	65	18
Increased damage to vegetation due to storms and snow loads	present state	2.21	2.83	2.08	2.40	2.00	2.25	1.75	23	57
	future	2.86	3.50	2.83	3.40	2.25	1.86	2.25	55	21
Higher risks of natural hazards (landslides, mudflows and floods)	present state	2.75	3.00	2.46	2.56	3.00	3.25	3.00	57	36
	future	3.35	3.67	3.31	3.38	3.17	3.33	3.25	85	6
Shortening winter seasons in ski resorts	present state	2.53	2.20	2.17	3.00	2.33	3.75	3.25	47	38
	future	3.15	3.20	3.00	3.83	2.50	2.57	3.75	66	19
Higher pressure from winter tourism on protected areas in higher altitudes	present state	2.70	2.67	2.33	3.00	2.86	4.00	3.50	51	40
	future	3.23	3.00	3.00	3.50	3.29	3.14	4.00	74	17
Difficulties in supplying high quality water and energy supplies due to lack of water	present state	2.07	1.80	1.73	2.75	2.86	3.00	2.00	26	64
	future	2.98	2.40	2.27	3.86	3.43	3.14	3.00	64	23
More restrictive regulations on building in areas exposed to risks of natural hazards	present state	2.52	2.33	2.46	2.43	2.71	3.75	2.50	38	55
	future	3.30	2.83	3.00	3.71	3.43	3.43	3.75	81	13
Further development of energy-saving options for transport and housing	present state	2.53	2.33	2.83	2.14	2.71	3.25	2.25	45	47
	future	3.32	3.00	3.62	3.14	3.29	3.29	3.25	83	11
More investment in GHG-reducing technologies	present state	2.52	2.00	2.77	2.31	2.86	2.75	2.25	45	51

	future	3.16	3.17	3.15	3.29	3.14	3.29	2.75	79	15

Conclusion: a brief comparison with other studies

At first glance, the DIAMONT WP6 report on major issues conveys a vision of the Alps as a region faced with similar problems to many other regions. For example, growing urbanisation is a general trend that can be observed almost everywhere in Europe, just like the difficulties in maintaining biodiversity in the face of anthropogenic pressures or land abandonment processes. However, certain important questions that underpin sustainable development do not appear in the list of major issues, such as unemployment, income inequities or differences in access to tertiary education, although they are central to EU policies and considered as key issues, for example, in the EU sustainable development strategy. They are also present in regional development policy objectives. It may therefore seem surprising that the experts did not attach more importance to these questions.

In fact, the experts focused above all on questions and issues which could have specific meaning for the Alps, due to the special characteristics of the region. Thus they paid particular attention to questions relating to threats on the Alpine natural heritage and landscapes, the value of which is widely acknowledged. The experts often mentioned renewable energy options, since they consider them important for the Alpine region even though energy resources are still abundant in the Alps and economic conditions do not necessarily favour the development of wind or solar energy. In the same way, soft tourism development is seen as an opportunity for the Alps, since it is concerned with sustainability issues relating to land use and management, local resources and initiatives, relationships with other regions, as well as the development of niche activities that are seen by certain experts as a panacea for facing up to the increasing competition in tourism as well as in other activities. Experts also underlined the negative impacts of traffic flows (noise and air pollution, greenhouse gas effects) for the everyday lives of inhabitants today as well as in the future, or focused on protection against natural hazards, which is a perennial issue. But they over-looked protection against industrial risks, which could be the cause of serious disasters in certain Alpine valleys.

Compared with other study methods, it is obvious that the Delphi survey technique used in this study has certain limitations due to the wide-ranging nature of the subject dealt with. Thus the method does not make it easy to rank the importance of issues that comprise series of sub-issues which cannot be defined from the beginning and require increasingly detailed analyses.

However, it is possible to compare the WP6 main issues with the priorities focused on in certain other programs.

- In its 2005-2010 work program, the *Alpine Convention* focuses on four main thematic priorities that would enhance trans-Alpine cooperation initiatives and meet some of the challenges of dealing with the inter-related aspects of sustainable development that are specific to the Alps. The first priority concerns transport issues, with the aim of promoting efficient and environment-friendly transport options, as well as the concept of 'soft mobility' within the Alps. Another priority concerns population, culture and identities, and focuses, for example, on cultural innovation and quality of life in the Alps. The third priority addresses tourism, sports and leisure activities, with the aim of providing new opportunities for the Alps to face up to global competition in tourism, by promoting new developments based on an assessment of cultural and nature amenities, and possibly on the introduction of behaviour codes for sports activities. The last

priority concerns the natural environment and the rural landscape, and addresses issues relevant to agriculture, environmental media, and rural development policies.

- The EU Community Initiative, *INTERREG III B Alpine Space Programme,* set up priorities for the period 2001-2006. These are now being revised in preparation for a new program. Based on the assumption that establishing the Alpine Space as a powerful area within the European network of development areas requires both a common understanding of the role of the Alpine Space in terms of sustainable spatial development and the implementation of various activities and measures to actively promote this development, the main activities focused on in the 2001-2006 programme concerned areas such as connection of the Alpine Space and its metropolitan areas as a central node in the system from the south-west to the east as well as from the Mediterranean to the Baltic and Scandinavian regions, the promotion of sustainable modes of transport and communication, the preservation of the diversity of the natural and cultural heritage, and the protection of the population and infrastructures from natural hazards.

There is a close relationship between the WP6 main issues and most of the Alpine Space programme priorities. However, it may be noted that questions about open air sports activities were not especially focused on in WP6, while aspects dealing with relationships between the Alpine core region and the periphery will be dealt with later in DIAMONT, through the main trend 'local centres and fringes between competence and cooperation'.

Some recent scientific studies, however, do not convey exactly the same vision of Alpine development issues as found in the DIAMONT project. For example, the *Alpine prospective study*, commissioned by the INTERREG III B Alpine Space programme and led by an international scientific group (Bausch and alii, 2005), identified EU territorial trends having a significant and strong impact on the Alpine Space, and distinguished, within the Alps, mountain areas and Alpine cities. With regard to the Alpine mountain areas, disparities linked with the concentration of economic activities or rising energy consumption, as well as declining State aid and funding, were seen as some of the main issues, whereas the DIAMONT WP6 experts did not focus on them at all. As for the Alpine cities, the WP6 experts have not identified, so far, the need to be in line with the knowledge economy or to deal with the problems of access to tertiary education. In addition, compared with the opinions of the DIAMONT WP6 experts, the Alpine prospective study attributed more importance to factors such as culture or immigration from metropolises in the development of Alpine cities.

Future DIAMONT studies may update the lists of Alpine development issues and provide more detailed information, since it is planned to conduct case studies in regions that are not affected in the same manner by the main trend under consideration. To prepare these studies, indicators based on relevant phenomena will be used to reveal to what extent the different issues are superimposed in certain regions. Discussions with stakeholders will be conducted with a view to identifying issues that were overlooked, or were not perceived by the experts at the level of the entire Alpine region, but which may be important locally.

Appendix - Delphi survey experts panel

Country	*Name*	*profile*	*Institute / Expertise*
Austria	Roland Psenner	scientist	Innsbruck, expert in Alpine Space
	Marina Fischer-Kowalski	scientist	Vienna, expert in social ecology
	Johann Stötter	scientist	Innsbruck, expert in natural hazards
	Ulrike Pröbstl	scientist	Vienna, expert in tourism
	Gerlind Weber	scientist	Vienna, expert in spatial planning
	Felix Jülg	scientist	Expert in regional development
	Ronald Blab	scientist	Vienna, expert in transport
	Ulrike Mast-Attlmayr	stakeholder	Government of Vorarlberg, expert in spatial planning
	Norbert Weixlbaumer	stakeholder	CIPRA Austria
France	Françoise Gerbeaux	scientist	Grenoble, expert in political science
	Gérard Brugnot	scientist	Grenoble, expert for natural hazards
	Claude Brand	scientist	Chambéry, expert in spatial planning
	Emmanuelle George-Marcelpoil	scientist	Grenoble, expert in tourism
	Jean-Jacques Brun	scientist	Grenoble, expert in landscape ecology
	Marie-Christine Fourny-Kolber	scientist	Grenoble, expert in geography
	Frédéric Bonhoure	stakeholder	Région Rhône-Alpes, Direction du Tourisme
	Guido Plassmann	stakeholder	Gap, Réseau Alpin des Espaces Protégés
	François Gillet	stakeholder	Grenoble, Comité du Massif des Alpes
	Guillaume Le Réveillé	stakeholder	Lyon, Direction Régionale de l'Environnement
	Vincent Neyrinck	stakeholder	Grenoble, Mountain Wilderness, Comité du Massif des Alpes
	Jean-Marie Ritschard	stakeholder	Grenoble, Commissariat à l'aménagement des Alpes
Germany	Wolfgang Haber	scientist	Munich, expert in landscape ecology
	Hubert Job	scientist	Munich, expert in economic geography (regional development and tourism)
	Michael Klaus	scientist	Munich, expert in regional development sustainability
	Jürgen Berlitz	scientist	Expert in transport planning
	Thomas Müller	stakeholder	Mayor of Oberstdorf
	Silvia Reppe	stakeholder	Berlin, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
	Herrmann Steinmaßl	stakeholder	Traunstein, President EuRegio Salzburg-Berchtesgadener Land-Traunstein
	Isabella Timm-Guri	stakeholder	Farmers association
	Michael Vogel	stakeholder	Nationalpark Berchtesgaden, leader Interreg IIIb "Habitalp"
	Stefan Witty	stakeholder	Munich, German Alpine Association
	Martin Wölzmüller	stakeholder	Munich, Bayerischer Landesverein für Heimatpflege
	Konrad Goppel and/or Gerlinde Bartel	stakeholder	Munich, Bavarian Ministry of Economic Affairs, Infrastructure, Transport and Technology
	Michael Hinterstoißer	stakeholder	Miesbach, agriculture, mountain farming
	Stefan Koehler	stakeholder	CIPRA Germany
	Birgit Wegner and/or Ilona Authried	stakeholder	EuRegio Via Salina
	Walter Grath	stakeholder	Mayor
Italy	Oswald Lechner	scientist	IRE (istituto di ricerca economica) - WIFO, Bolzano
	Antonio Massarutto	scientist	Università di Udine, Dipartimento di Scienze Economiche
	Harald Pechlaner	scientist	Eurac, Institute for Management and Tourism
	Maria Bruna Zolin	scientist	Università degli Studi di Venezia, Dipartimento di Scienze Economiche
	Paolo Angelini	stakeholder	Ministero Italiano dell'Ambiente e della Tutela del Territorio
	Ester Cason Angelini	stakeholder	Fondazione Angelini
	Walter Huber	stakeholder	Provincia Autonoma di Bolzano, Dipartimento all'urbanistica, ambiente ed energia
	Walter Weiss	stakeholder	Rete di comuni "Alleanza nelle Alpi", mayor of Naturns
	Luciano Caveri	stakeholder	President of Autonomous Region of Valle D'Aosta
	Enzo Marsilio	stakeholder	Regional Minister for Agriculture and Mountains of Friuli Autonomous Region
Slovenia	Boštjan Pokorny	scientist	Expert in forestry
	Frank Lobnik	scientist	Expert in geochemistry and soil development
	Marjan Ravbar	scientist	Expert in urban geography
	Andreja Ferreira	scientist	Expert in forestry
	Dejan Cigale	scientist	Expert in geography
	Albina Štiftar	stakeholder	Tourist farms association
	Aša Mansoor	stakeholder	Ministry of the Environment and Spatial Planning
	Jernej Stritih	stakeholder	CIPRA Slovenia
	Jure Žerjav	stakeholder	Mayor
	Lucijan Rejec	stakeholder	Fishing club
	Tea Lukan Klavžer	stakeholder	National Park officer
Switzerland	Manfred Perlik	scientist	Bern, expert for spatial development
	Thomas Scheurer	scientist	Expert in ecology
	Rita Schneider-Sliwa	scientist	Basel, expert for governance
	Bruno Messerli	scientist	Bern, expert in geography
	Bernard Debarbieux	scientist	Geneva, expert in geography

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