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**Mountain Areas in Europe:
Analysis of mountain areas in EU
member states, acceding and other
European countries**

Final report

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Executive summary

1. Introduction

The global importance of mountains is increasingly recognised, as shown by the inclusion of a specific chapter in ‘Agenda 21’ and the declaration of the year 2002 as the International Year of Mountains. Europe has many mountain ranges, occurring in almost all parts of the continent; most European countries have at least some mountains. These mountains are very diverse at every scale, in terms of climate, ecology, economy and other characteristics. European mountain landscapes are cultural landscapes reflecting long-term interactions of human beings with biophysical systems.

Europe’s mountains are of vital importance to the continent’s population in four main ways: 1) as ‘water towers’ supplying much of the continent’s water, especially in summer, and as sources of hydroelectric power; 2) as centres of diversity, both biological and cultural; 3) for providing opportunities for recreation and tourism, based on natural attributes and cultural heritage; and 4) because of their sensitivity to environmental change, as manifest in the melting of glaciers. Mountain geo- and ecosystems are highly sensitive to environmental change, and extreme events likely to derive from climate change may have major consequences in both mountain areas and downstream. While such general statements are relatively easy to make, there is generally a lack of data for developing policies and evaluating their impacts. Even where such data are available for a number of countries, differences in definitions and methodologies of data collection and analysis make comparisons difficult.

In the context of European cohesion and enlargement, mountain regions are considered as having permanent natural handicaps, due to topographic and climatic restrictions on economic activity and/or peripherality. All acceding countries except the Baltic States and Malta have mountains. As Europe expands and becomes increasingly complex, future policies for mountain areas must be based on a thorough understanding of the current social, economic, and environmental situation and the degree of success of past and current policies directly or indirectly affecting these areas. Thus, the aim of this study is to provide an in-depth analysis of the mountain areas of the 15 countries of the European Union (EU), the 10 acceding countries, the two accession countries and Norway and Switzerland, referred to below as ‘the study area’.

The study has three complementary sets of objectives:

- 1) to develop a common delineation of the mountain areas of the 29 countries of the study area;
- 2) to compile statistical and geographical information necessary to describe and analyse the situation in these mountain areas (including in relation to national and EU references); to develop a typology of these areas; and to create a database on which future analyses and policies may be based;
- 3) to analyse the measures and policies implemented by national governments and the EU with regard to mountain areas; to evaluate the impacts of these measures and policies; and to develop proposals for adjustments to make them better suited to the

situation of mountain areas, their needs and opportunities.

The study was undertaken by a consortium of 22 partners from across Europe, led by Nordregio, the Nordic Centre for Spatial Development.

2. Methodology and delineation scenario

2.1. Data sources, availability and comparison

The study used a wide range of data sources, some developed specifically for the study. Geographical indicators concern land use, climatic and topographic conditions. Demographic indicators include population numbers, age structures and densities, births, deaths, and migration. Economic indicators include information on employment and unemployment. Infrastructure indicators concern tourism, health care, educational facilities, accessibility, and transport networks. In addition to published documents, the indicators were principally based on three types of data:

- 1) quantitative data compiled by the national experts from national sources in the respective country, wherever possible collected at NUTS 5 (municipality) level;
- 2) national reports compiled by the national experts based on interviews and review of documents, complemented by responses from European organisations concerned with mountain issues;
- 3) data recorded within geographic information systems (GIS).

2.2. The delineation of European mountain areas

The first strand of the project was to delineate mountain areas for the purpose of statistical analysis, recognising that many national definitions have been developed, mainly with regard to agricultural policy but also, in a few countries, for the development of regional policy.

Mountain areas are economically handicapped in two interconnected ways, due to their difficult topography and climate conditions. The method chosen to identify these regions was a refinement of the global approach developed by the UNEP-World Conservation Monitoring Centre, using a digital elevation model which records the elevation of every square kilometre of the Earth's land surface. Following the principle that the threshold for rough topography increases as the altitude decreases, the chosen criteria for altitude and slope were as shown in the following table:

Class (elevation in m)	Additional criteria
> 2500	
1500-2499	> 2° slope within 3 km radius
1000-1499	>5° slope within 3 km radius and/or local elevation range local elevation range >300 m within 7 km radius
300-999	local elevation range >300 m within 7 km radius
0 – 299	standard deviation > 50 m for cardinal points

Following the initial delineation of the mountain area according to these criteria, 1) areas in the Nordic countries with a temperature contrast similar to, or worse than the highest parts of the Alps were included; 2) isolated mountainous areas less than 5 km² in area were not considered; 3) non-mountainous areas within mountain massifs were included; 4) the mountain area was approximated to municipal boundaries: to be considered as ‘mountain’, a municipality had to have at least 50% of its area within the area delimited as ‘mountain’. The effects of this approximation were generally limited; at the European scale, they are visible only in countries with very large municipalities, such as Sweden or Finland. The inclusion of lowland population in municipalities with over 50% mountainous terrain is justified, insofar as their economic activities and living environment are likely to be heavily influenced by their proximity to mountain areas.

The results show that mountain municipalities cover 1,900 thousand km² (40.6% of the total area) of the study area are inhabited by 94.3 million people (19.1% of the total population). In the 15 Member States, mountain municipalities cover 39.9% of the area and have 17.8% of the population, for the 12 acceding and accession countries the figures are 22.4% and 17.6% respectively, and for Norway and Switzerland 91.3% and 76.2%. In most Member States, the area thus delineated is greater than that defined as Less Favoured Areas; the opposite is true in Finland and Sweden. The final delimitation scenario was approved by a interservice group of the European Commission, also including AEM and Euromontana.

To provide a spatially-defined basis for analysis of the characteristics of the mountain areas, they were classified into massifs as perceived and named at national and regional levels. These massifs vary considerably in their area, population, and number of municipalities included, reflecting variations both across Europe and between countries. Recognising the functional connections between mountain areas and surrounding lowlands, transition areas were defined, within distances of 10 km, 20km and 50km from mountain areas. About 60% of the overall population in the study area lives in or close to mountain areas: almost 20% in mountain areas; another 25% within 10 km; another 5% within 20 km; and a further 10% within 50 km. The high population within these transition areas reflects their roles in service provision, as well as access to recreational opportunities and energy sources deriving from mountain areas.

3. Analyses and results

3.1 Terrain, climate and land covers/uses in mountain areas

The topography of Europe’s mountains varies greatly, from the high mountains such as the Alps, Pyrenees, Romanian Carpathians, and southern Norway to the lower ‘middle mountains’ that are far greater in extent. There is great climatic variation, with major north-south and west-east trends.

There is also a great diversity of land covers. In most massifs – except for Sicily, southern Greece, Ireland and the UK – forest cover is dominant. In northern Europe, grassland is proportionately more important, as are barren land and permanent ice and snow in Scandinavia. Significant proportions of the Highlands of Scotland and other mountains of the British Isles are covered by moorland. In central and southern Europe, arable land is of far greater importance than grassland, which is rather limited

in extent except for the Massif Central, Crete, the Carpathians, and the Apennines. Mediterranean scrub is important in Greece and across much of the Iberian peninsula.

3.2. Demographic patterns and trends in mountain areas

Various demographic patterns and trends were examined, though complete data sets were not available for all variables in all countries. In all EU Member States, Norway, and Switzerland, the average population density is greater in mountain municipalities than in lowland municipalities. While this pattern is also true for some of the acceding countries, there are others where the reverse pattern is true: particularly Hungary but also, to a lesser extent, Poland and Slovenia. In Bulgaria, the average population density in lowland municipalities is only slightly higher than in mountain municipalities. Similar patterns are found with regard to the least and most densely settled municipalities. For the former, in almost every country with available data, these are more likely to be in mountain than lowland areas. For the latter, in only Hungary, Poland, and Slovenia is the proportion of municipalities with over 200 inhabitants per km² greater in the mountains.

The massifs with the lowest population densities (<25 inhabitants/km²) are the French Pyrenees, certain Spanish ranges, and in the Nordic countries, Scotland, and Ireland. The highest densities (>125 inhabitants/km²) are found in most of the mountains of Germany, the Basque Country and Catalunya in Spain, Sicily, the Swiss Jura and Mittelland, the Sudetes, northern Slovakia, and northern Slovenia. The broad patterns at this level of aggregation are greatly influenced by the large populations of urban centres, and there is great variation within massifs.

The national proportion of the population under 15 varies considerably across the countries of the study area, from 14.6% (Czech Republic) and 14.8% (Bulgaria) to 24.1% (Germany). The range of variation across EU Member States is similar to that across the acceding and accession countries. The proportion under 15 in mountain areas is generally similar to that in lowland areas. However, large standard deviations mean that none of these differences is very significant at the national scale. This is also true for the national proportion of the population over 60, which varies considerably across the countries of the study area, from 15.1% (Ireland) and 15.3% (Germany) to 23% (Greece). In nearly all countries, the proportion in mountain areas is either similar to or higher than in lowland areas. The high proportion of people over 60, combined with the problems of access, implies increasing demands on public services.

From 1991 to 2001, there were large decreases in population over much of Bulgaria, Finland, Norway, Portugal, Romania, and Sweden. Only in Corsica, Sicily, and the central Apennines of Italy can mountain ranges be distinguished as having particularly high rates of depopulation. Nevertheless, for nearly all countries for which data are available, rates of depopulation were higher in mountain than in lowland areas, especially in Cyprus and Norway. The only real exceptions were the UK (England and Wales only) and Belgium. Municipalities with depopulation over 10% were also more common in mountains than lowlands except in Germany, the UK (England and Wales only), and Bulgaria. Over the same period, some mountain areas had overall relative population growth: in much of the French Alps, the mountains of Murcia (Spain), Slovenia, Switzerland, western Austria, and the parts of Germany and Italy directly north and south. While levels of outmigration are often higher from mountain

than lowland municipalities, such trends – as well as those relating to negative natural growth – appear to reflect national trends, rather than being specifically related to mountain/lowland differences.

In summary, very different processes of demographic change are taking place in different parts of the European mountains, as underlined by two sets of comparisons. Comparing population change (1991-2001) and population density, the general trend is stable or positive in north and central Europe, with some exceptions. In eastern Europe, depopulation is the norm. In the Mediterranean region, no clear pattern can be discerned. Comparing population change with the proportion of employment in the primary sector, such trends are accentuated, but the proportion employed in this sector does not appear to play a significant role.

3.3. Economic characterisation of mountain areas

The economies of Europe's mountain areas are highly diverse at all spatial scales. While agriculture and forestry are often perceived as vital in local economies and for cultural identity, employment in other sectors is generally higher. Quantification of the level of economic development of mountain areas is only possible using indirect indicators such as employment structure and unemployment rates. Data were available for all countries with mountains except Cyprus and Greece. As pluriactivity is very common, at various temporal scales, the conclusions drawn can only be indicative. Equally, given that the populations of individual massifs vary from a few thousand to nearly three million, many statements may mask significant regional differences, and trends in employment may reflect national characteristics, rather than being specific to a particular massif.

In EU Member States, Norway and Switzerland, primary sector employment is proportionately higher in mountain than lowland areas. In acceding countries except for Slovakia, the opposite is true. In the EU, massifs with a very high proportion of employment (>10%) in this sector are located in the Iberian peninsula, Ireland, the Bohemian mountains (Austria, Germany), the French Pyrenees, the Azores, and Finland. In the acceding and accession countries, the highest proportions are in the Polish Carpathians and Bulgaria. Conversely, rather low proportions are found in most of the same countries: the Basque and Catalan ranges and Balearic islands (Spain), Bulgaria's western mountains, and the Ore mountains and White Carpathians (Czech Republic). The great diversity underlines the need for region-specific policies for mountain agriculture and forestry within broader national policy contexts.

In Germany, Portugal, Austria and Luxembourg, the proportion of secondary sector employment is higher in mountain than lowland areas; in other EU Member States, the proportion is similar. In most other countries, particularly Slovenia and the Czech Republic, this proportion is higher in mountain than lowland areas. However, in Hungary, the pattern is reversed. The mountains of the Czech Republic have very high proportions of employment in this sector, as do those of Slovenia, Slovakia, Bulgaria, and the UK apart from Scotland. Other highly industrialised massifs include the German Black Forest, the Italian central Alps, the Macico noroeste (Portugal), the Catalan range, and the Spanish Pyrenees. The massifs with the lowest proportions of secondary sector employment are in northern Fennoscandia and southern France. Again, there is a great diversity of situations, particularly reflecting the extent to which large industrial cities are included in areas defined as mountainous.

The tertiary sector accounts for the greatest proportion of employment in all the countries of the study area; only in the Czech Republic is the relative proportion in mountain areas below 50%. In nearly all EU Member States, particularly Portugal, Luxembourg, Ireland, and Germany, relative employment in this sector is lower in mountain than in lowland areas. The only Member State where the relative proportion in mountain areas is higher is Italy; this is also true in Norway. In the acceding countries, the patterns vary. In four, especially Slovenia and the Czech Republic, the proportion in mountain areas is lower. Conversely, the proportion in mountain areas is higher in three countries, particularly Hungary, which has the greatest national proportion of tertiary employment. Within massifs, proportions are higher than average for the study area across most of the Nordic countries and southern France, especially the Mediterranean Alps and Corsica. For most massifs, however, employment in services is lower than the average for the study area.

In summary, the pattern of the overall structure of employment is complex. High proportions of service activity correspond to both economically prosperous mountain areas (e.g., French Northern Alps, Swiss Mittelland) and declining areas, where public service provision is the main remaining activity (e.g. northern Norway). Diverse mountain areas (Hardangervidda and the southern mountains of Norway, northern England, Wales, the Czech Sudetes, the Black Forest of Germany, Catalunya and the Basque Country in Spain) retain a relatively high share of secondary employment. Mountain areas with a dominant primary profile are concentrated in southern Europe (e.g., Bulgaria, Spain, French Pyrenees and Massif Central, Corsica, Sardinia, Sicily and southern Italy) and Poland. While one can identify some significant economic profiles at massif level, potential for development largely depends on the proximity of an urban network and satisfactory local service provision.

To complement the analyses of employment, unemployment rates in massifs were calculated (based on employed population per sector) and compared to national rates of unemployment. The resulting patterns are complex, though it is notable that relative levels of unemployment are high in the most peripheral areas. Conversely, the lowest rates are generally in massifs near or including major urban industrial centres. There are some exceptions to this general trend, notably in the low mountains of Germany, the Belgian Ardennes, and the Ore Mountains of the Czech Republic and Germany, all of which have relatively high unemployment.

3.4 Accessibility, infrastructure and services in mountain areas

Both European and national peripherality indicators were calculated. The former evaluate the remoteness of a mountain range in an overall European context, the latter in a national context. While certain mountain areas, including those of northern Norway, most of Sweden and Finland, the Highlands and Islands of Scotland, and the Mediterranean islands, are peripheral in terms of car travel at both European and national scales, others are much more accessible when the national level is considered. There are also clear contrasts between different sides of individual massifs and mountain ranges (e.g., the Alps and Pyrenees). In terms of distance to large cities where diverse services can be found, mountain areas that are particularly disadvantaged are in peripheral areas with low population densities, e.g., much of the Fennoscandian mountains, the Highlands of Scotland (UK), Corsica (France), Sardinia (Spain), and Crete and other Greek islands. Peripherality involves access not only to facilities, but also to centres of political power – particularly capital cities–

where many policies relating to mountain areas are made. Even when massifs are far from capital cities, such problems of political peripherality may be counter-balanced by strong regional government, e.g., in Bavaria (Germany), northern Italy, Spain, and Scotland (UK).

Transport networks are essential for decreasing the effects of peripherality, particularly through the development of tourism. Certain mountain ranges and massifs, e.g., the Alps, the Apennines, and the German middle mountains, are quite well served with motorways. The mountains of Germany, Slovakia, the northern and central Alps, and the Sudety mountains of the Czech Republic and neighbouring countries are also well-served with railways. Many massifs – e.g., all Nordic massifs, all massifs in Eastern Europe, and most massifs in Spain and Portugal – have rather low levels of traffic on trunk roads. These contrast with high levels on transit routes through the Alps (though much of this is short-distance), and on trunk roads in the Apennines (Italy), southern Bavaria (Germany), most German and English mountains, and mountain areas close to urban agglomerations. There is a clear West-East divide in not only in trunk road infrastructure supply, but also traffic flows on major arteries. However, long-distance through-traffic is likely to grow rapidly.

Only a few projects within the Trans-European Networks (TEN) passing through mountain areas involve roads (Portugal/Spain, Ireland/UK); the majority are railway projects, improving access to and through the Alps, the Apennines, the Pyrenees and other Spanish mountains, and the lower mountains of England, France, Germany, and Portugal. The new tunnels under the Swiss Alps should also be mentioned. Most of these projects are dedicated to tackling capacity problems relating to long-distance through-traffic, and may do little for solving local or regional transport bottlenecks.

Rough terrain significantly increases the costs of constructing and maintaining transport infrastructure in mountain areas. Lack of flat terrain, and the dangers of flying, limit the possibilities of constructing airports. However, nearly all countries with a significant mountain area have regional airports within mountain ranges; exceptions are Cyprus, Portugal, Slovakia, Slovenia, and the UK. In Switzerland, Greece, Norway, and Austria at least half the airports are in mountain areas; airports are especially critical for access in northern Scandinavia and to the Spanish, Greek, or Portuguese islands which rely largely on tourism. Nevertheless, mountain municipalities except for those in the Alps and northern Italy generally have relatively poor access from an airport (i.e., than 60 minutes drive).

With regard to other services – e.g., medical, education – lack of easy physical access is often compounded by the fact that populations are small and spread over relatively large areas. Consequently, mountain people often have to travel far to gain access to such services, especially at higher levels. Lack of access to higher education has long been identified as a critical constraint to development. To gain university-level education, the brightest young people have nearly always had to leave their home region. New information and communications technologies (ICT) are mitigating against this aspect of peripherality. Among Member States, Greece (60%) Austria (38%), Portugal (29%), Italy (29%), and Spain (27%) have a significant proportion of universities within mountains. High proportions in the acceding and accession countries are found in Slovenia (75%), Bulgaria and Slovakia (40%), and Romania (23%). Proportions are also high in Switzerland (80%) and Norway (50%). In general, these universities are close to the edges of mountain areas. Far more universities are in

transition zones, particularly in the Member States of Germany, the UK, Spain, Italy, and France; and the acceding countries of the Czech Republic, Romania, Hungary, Slovakia, and Bulgaria. Thus, access to higher education remains difficult for many mountain people unless they live close to the edges of their respective mountain range.

In general, the density of major hospitals (with >300 beds) in mountain areas is significantly lower than in lowland areas. The highest densities of hospitals and hospital beds are in the mountains of eastern Germany, Poland, Italy and certain Spanish massifs. The density is rather low in Switzerland, western Germany, parts of Spain, and most massifs in Scandinavia. Many massifs have no major hospital; not only around the European periphery, but also near the centre, e.g. the Vosges and Ardennes. In some smaller mountainous countries (e.g. Austria, Switzerland, Slovakia), a significant proportion of hospitals are located in mountain areas. To some extent, this is also true for some larger countries such as Italy or Spain; generally, a high proportion of hospitals is in transition zones. Thus, in some countries, e.g., Germany, Poland, Hungary or Slovakia, almost all mountain municipalities are within one hour's driving time from a major hospital; the opposite is true for Sweden, Finland, Norway, Romania, Bulgaria, Greece, large parts of Spain, much of the Apennines, the Massif Central (France), and the central Alps.

Despite the great current and potential importance of tourism in many of Europe's mountain areas, few disaggregated and comparable statistics relating specifically to tourism in mountain areas are available. Only indicators relating to downhill skiing could be obtained in a consistent way across most of the study area. In most massifs, this activity is concentrated in a relatively small number of resorts. The Alps are particularly well-supplied with ski lifts and skiing terrain; but the density of facilities in the Sudetes (Czech Republic), the Carpathians (Slovakia) and French Pyrenees and Vosges is also notable. Two factors have interacted in driving such developments: the scale of the topography, and accessibility to major urban centres.

Mountain areas play a crucial role for power supply: 26.5% of existing power stations in Europe are located within them. In Austria, Belgium, Greece, Sweden, and Switzerland, all water power stations are in mountain areas; the proportion is also significant for other countries (Germany and Romania, 80%; Italy, 60%). In Bulgaria, 80% of gas, oil and coal power stations are in mountain areas; the proportion is 75% in Greece, and 50% in Austria. Nuclear power stations are also located in mountain areas, especially in Switzerland and Spain. Almost 50% of planned power stations are proposed for mountain areas.

A composite indicator of the density of facilities (airports, large hospitals, universities) per km² shows a high density of infrastructure in Switzerland, and in corridors across the Alps and from Munich to Vienna. Some massifs, e.g., the Pyrenees, the northern Apennines, and the German Bohemian mountains, can be considered as real barriers. The overall picture is very similar to accessibility, which is highest where the density of infrastructure supply is highest, which in turn correlates to population distribution. However, while the number and density of services within mountain areas is lower than in lowland areas, transition areas play crucial roles in providing access to such services, often compensating for missing facilities within mountain ranges. The lack of one type of infrastructure in a massif may be compensated by an over-supply of another type of infrastructure. While the centre-periphery picture emerges with regard to accessibility to the different types of

infrastructure, there is also a great variety within massifs; sometimes greater than the variety between massifs. There is a clear divide in infrastructure service supply between northern Europe, central Europe, and southern Europe, and between current EU Member States and acceding and accession countries. It is not possible to state that, in general, mountain ranges are handicapped by poor accessibility or lack of infrastructure. One must consider each massif individually to determine the specific handicaps, and thus identify needs for action.

3.5 Typologies for European mountain areas

Three typologies of mountain areas were developed, using statistical approaches and constructed at the level of national massifs, on the basis of high/low values for sets of indicators.

The first, on social and economic capital, was derived from population density, population development, and access to markets. While mountain areas with high population densities are identified in traditional European core areas, as well as some coastal or heavily urbanised mountain areas, the spatial pattern of population development is more specifically related to mountain conditions. All Eastern and Central European countries for which the population data are available are experiencing demographic decline, as are all Italian mountain areas except for those in the Alps. Loss of population is also occurring in peripheral parts of Scandinavia and the Iberian Peninsula. The ‘access to markets’ criterion reflects a European core-periphery pattern, as it proved difficult to take account local accessibility contrasts between lowland and mountain areas at regional or national scales .

Five categories were identified; 1) ‘the best preconditions’; 2) ‘high potentials, negative population trends’; 3) ‘low population density islands near high population density areas’; 4) ‘remote with low population densities’; and 5) ‘remote with high population densities’. While many countries contained massifs within a number of these, some parts of Europe fell within one category: for instance, all massifs in Hungary, Poland and Slovakia in category 2; and all massifs in Cyprus, Ireland, the Nordic countries, and Romania within category 4. Category 3 of this typology contains areas for which topography has had the most visible effects on settlements, with strong contrasts between mountain areas and neighbouring lowlands. It was not possible to take into account local contrasts in accessibility.

The second typology considered transport infrastructure, national and regional accessibility, and services (higher education and major hospitals). Four groups were identified: very good, good, fair, and poor. The former two are largely in the European ‘core’, from England to Sicily and Slovakia. The third group surrounds these, and the last is found in Scotland and the Nordic countries.

The third typology concerns land use and land covers, and was derived from the analysis of GIS data on the proportion of arable and forest land, roughness of terrain, and climatic contrast. The typology is like a classical ecological classification, contrasting the very different mountain environments across Europe, with particular contrasts between forested and open ecosystems, low-angle and steep terrain, and different climatic types.

4. Mountain policies in Europe

4.1. Description of policies at national and European level

Mountain policies include sectoral and integrated policies both directly targeted and indirectly influencing mountain areas. Countries where no mountain policies can be identified include countries without mountains, those with either very few or low mountains, and those that are largely mountainous. In most countries with middle mountains, and most acceding and accession countries, mountain policies/measures are sectoral. In Austria, Germany, and Spain, mountain policies are addressed to multi-sectoral development. These countries have progressively widened the scope of their mountain policy, abandoning an exclusive original focus on agriculture. Mountain policies often address issues related to economic development (mainly tourism), infrastructure and environment. In France, Italy, and Switzerland, mountain policies are addressed to overall development, through an integrated approach which reflects a more advanced position with regard to sustainable development. The range of tools developed to implement policies includes the legal definition of mountain areas, usually in terms of altitude and, often, slope; the delineation of massifs; mountain-specific legislation; and research and training centres and programmes. The implementation of policies at the national level is explored for the sectors of agriculture, forestry, mining and manufacturing, tourism, infrastructure, living conditions, and environment, and examples of specific actions are presented.

Complementing these sub-national and national policies are various trans-national policies and instruments, including both trans-frontier institutions for regional co-operation and international agreements: the Alpine and Carpathian Conventions. There are also many Community policies of relevance to mountain areas, particularly those relating to Less Favoured Areas, Objectives 1 and 2, Interreg, and LEADER. In acceding countries, both PHARE and SAPARD projects have focussed on mountain areas. It is difficult to separate general trends and other policy effects from the effects of specific mountain policies. The few evaluations that have been done suggest that: mountain populations are generally declining; funding under the CAP does not always succeed in its objectives in mountain areas; economic diversification is taking place, but unemployment remains high in some areas; the environment, landscapes, and cultural values have become better protected; barrier effects have been reduced, but mainly at the regional level.

4.2. Conclusions from gathering expert opinions on mountain areas and their policies

The national reports provided essential complementary information to the quantitative data compiled during the study, recognising that, for many policy fields, such data are not consistently available at a sufficient level of detail at national or European scales. National analyses of strengths, weaknesses, opportunities, and threats (SWOT) were undertaken for a number of categories: demography, economy, tourism, environment, service provision, infrastructure/accessibility, agriculture and cultural identity. Building particularly on these, three types of strategies for future development were identified. Reactive strategies are those which compensate for handicaps and structural difficulties, and are found especially in acceding and accession countries, usually with a primary focus on the modernisation of agriculture. Similar strategies are also found in Portugal and Spain. Proactive strategies (e.g., Austria, France,

Slovenia, Switzerland) are targeted primarily at a diversified mountain economy, and recognise the crucial importance of good accessibility. Sustainable strategies, in some industrial and urbanised countries (e.g., Sweden, UK), give greater attention to environmental issues and the role of mountains in responding to urban demands for ‘natural’ environments with opportunities for outdoor recreation.

Such themes derive from national debates, from which a number of themes of controversy or conflict emerge. These include: the need for equitable consideration of not only mountain, but also other rural and urban areas that are disadvantaged; questions regarding the unity/specificity and/or diversity of mountain areas within individual countries, recognising that policies often target higher mountain areas and comparatively neglect lower mountain areas; and the challenge of finding a balance between development and preservation. These themes, as well as evaluation of the potential application of lessons learned from the implementation of the most advanced mountain policies, link to expectations for future policies. Particularly among key organisations, but also among many key actors, there is a high level of expectation for an EU mountain policy. However, the great diversity of situations implies needs for subsidiarity and significant regional adaptations. Mountain policies need to be multi-sectoral, with increased emphasis on sectors others than agriculture. Beyond the national scale, there are many possibilities for co-operation between states and regions, especially in the context of enlargement. Finally, it should be noted that northern countries are attached to the mountain equivalence of their natural conditions.

5. Conclusions and recommendations

Since the late 1980s, a number of documents have proposed various elements of policies for European mountain areas. A key issue is to recognise the great diversity that characterises these areas, at all scales. Natural, economic, and social handicaps exist, but not everywhere or to the same extent. In the context of globalisation, mountain areas face three contradicting challenges: to turn into ‘open museums’ or areas for recreation and protected nature for industrialised societies; to be regarded as regions to be economically exploited, or even over-exploited; and abandonment.

Given that the delineation of mountain areas developed in this study is different from that developed by individual states for their own policy purposes, states are encouraged to compare this delineation with national delineations. Yet, despite recognition of the European dimension of mountain regions and expectations from mountain actors, the need for an EU policy specifically directed to mountain areas and distinct from other structural policies is not unequivocal. Structural problems can generally be addressed through the classical objectives of regional policies and through the programming approach of the Structural Funds. One issue to be defined is the likely extent to which mountains are included in territorial objectives after 2006. Nevertheless, co-ordinated mountain policies will involve a large number of different sectors, and therefore remain a national responsibility. Any future EU mountain policy must respect the principle of subsidiarity. Given the great variety in national approaches to mountain issues, there will be much to gain from international comparative studies of the implementation of policies and measures and systematic dissemination of experiences between regions and countries.

Promoting networking between various players (institutions, communities, enterprises) in cross-border co-operation at different levels, within as well as between countries, is another crucial issue at the European level. Mountain areas in many cases act as natural barriers between Member States, and therefore reinforce border effects. International cooperation in these areas is therefore essential not only for the mountain areas themselves, but also for the lowland areas they separate.

As the CAP continues to evolve, a primary goal should be to encourage systems that give added value to the specificities of mountain agriculture and consider the entire process from production to marketing. Countries should particularly consider mountain regions when developing the second pillar of the CAP, addressing agriculture in the broader context of multi-functional regional economies. Similarly, policies for mountain forests should address their multi-functional management, including for non-market values, and the need to manage forests in the context of the wider landscape. A key principle should be to encourage multi-sectoral approaches and pluri-activity involving various economic activities. Data on pluri-activity should be widely collected. Diverse approaches to tourism should be adopted, adapted to local conditions. Equally, where manufacturing is in decline, advantage should be taken of the cultural heritage and infrastructure, and new opportunities based on existing advantages developed. Information and communications technologies (ICT) can play key roles in providing new economic opportunities.

To allow the definition of current conditions and the evaluation of future trends, as key inputs to policy making and evaluation, there is an urgent need for more consistent, disaggregated data collection and the synthesis of existing studies. Greater support for research should also include the establishment of a network of mountain research and training centres. The training of stakeholders is also a key area for action. Finding a balance between the objectives of development and preservation should be resolved according to the principles of sustainable development. Europe-wide networks and structures with a mountain emphasis will have key roles in this, especially with regard to sharing knowledge and experience. This is particularly urgent in the context of enlargement, with the addition of many mountain areas with more fragile economies and more limited human and financial resources to develop their resources according to the model of the current EU Member States.

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