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Sustainable Development Perspectives for Serbian Mountain Areas: Lessons from the European Context

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SUMMARY

Starting from the hypothesis *European countries have more experience in addressing problems in their mountain areas*, the research was designed as a cross-country study mixed with a case-study approach. Major European mountain massifs were embraced within the first phase of the research (exploratory-descriptive), indicating how similar problems in Serbian [SMA] and other European mountain areas [EMA] are and how their countries address them. The next task was to present how sustainable development of SMA alone can be enhanced, which was done in the explanatory phase. Multiple source analysis, also known as the triangulation method, enabled evidence cross-checking. In the case of SMA, data was collected from both available sources and interviews conducted in three rounds with experts, authorities and the local population (in four municipalities), while data for other EMA was obtained solely from written sources. Both qualitative and quantitative data were analysed.

The research led to identification of five categories of problems: environmental, demographic, infrastructure, economic and management. In this regard, SMA have been shown to be similar to other EMA in terms of environmental and demographic issues, while differing from them in matters of the economy, physical accessibility, infrastructure endowment and management. The Balkan Mountain Massif and the Carpathians showed the greatest similarity to SMA. In contrast, the Alps showed a considerably lower extent of problems because of the length of time already spent on finding solutions for them.

The identified problem categories in mountain areas Serbia has been dealt for the shortest period of time, including defining and promotion of principles, instruments and measures. The issues stressed are: Serbia lacks decision-making power below the national level, explicit measures for mountain area problems and their implementation. The greatest gap between EMA and SMA appeared to be in the sphere of management, where Serbia has done the least.

The last part of the research argues and suggests the prospects for the sustainable development of SMA, split into three main fields of action - management, infrastructure and the economy, and additionally a couple of actions valuable for all the fields simultaneously – urban-rural dependences and activation of the civil sector and volunteers. Within the management field, active local population participation, responsible realisation of the full cycle of decision making - from research to evaluation – and the special status for SMA are highlighted as inevitable in the enhancement process. In the field of the economy, the suggestions made are economic diversification and the improvement of products and job attractiveness, which are expected to positively affect the dissemination of knowledge, product marketing and accessibility to the market. Finally, the sustainable development perspectives aligned in the field of accessibility and infrastructure are the endowment of roads, modernisation of education and ICT endowment.

REZIME

Polazeći od hipoteze da *druge evropske zemlje imaju više iskustva u delovanju na probleme u njihovim planinskim područjima*, ovo istraživanje je sprovedeno uključujući više evropskih zemalja (cross-country study) i pristup studije slučaja (case-study). Najveći evropski masivi su obuhvaćeni u prvoj fazi istraživanja (istraživačko-deskriptivnoj), ističući sličnosti i razlike u problemima između Srpskih [SPP] i ostalih evropskih planinskih područja [EPP], kao i u načinu na koje se njihove zemlje odnose prema njima. Naredni zadatak je bio kako održivi razvoj SPP može biti unapređen, što je urađeno u obrazložavajućoj fazi (explanatory phase). Analiza višestrukih izvora (multiple source analysis), poznata i kao metod triangulacije, omogućila je unakrsnu proveru podataka (evidence cross-checking). U slučaju SPP, podaci su prikupljeni iz dostupnih izvora, ali i putem intervjua sa ekspertima, vlastima i lokalnim stanovništvom (u četiri opštine), sprovedenih u tri navrata; dok su podaci u vezi sa EPP pribavljeni samo iz pisanih izvora. Analizirani su kvalitativni, kao i kvantitativni podaci.

Istraživanjem je ustanovljeno pet kategorija problema: problemi životne sredine, demografski, infrastrukturni, privredni i upravni. S tim u vezi, SPP su se pokazala sličnim ostalim EPP po pitanju životne sredine i demografske strukture, a najviše se razlikujući na polju privrede, fizičke pristupačnosti, infrastrukture i upravljanja. Balkanski planinski masiv i Karpati su se pokazali najbliži SPP. Nasuprot, Alpski masiv je pokazao znatno manji intenzitet problema, zahvaljujući dužini vremena utrošenoj na pronalaženje njihovih rešenja.

Svaki od prepoznatih kategorija problema u planinskim područjima Srbije se bavi najkraće, kako u definisanju i promociji principa, tako i kroz instrumente i mere. Posebna pažnja je u ovoj disertaciji obrađena na moć donošenja odluka iznad nacionalnog nivoa i nedostatak definisanja i primene eksplicitnih mera za rešavanje problema. Najveća razlika između drugih EPP i SPP ispostavlja se da je po pitanju njihovog upravljanja, gde je u Srbiji najmanje urađeno.

Poslednji deo disertacije argumentuje i predlaže izgleda za održivi razvoj SPP, podeljenih u tri glavna polja delovanja – upravljanje, privreda i infrastruktura, kao i dva dodatna polja koja koriste svim ostalim poljima zajedno – urbano-ruralna zavisnost i pokretanje civilnog i volonterskog sektora. U okviru polja upravljanja naglašeni su, kao neizostavni, aktivno učešće lokalnog stanovništva, odgovorno sprovođenje punog kruga u donošenju odluka (od istraživanja do evaluacije) i dodela specijalnog statusa SPP. U polju privrede predloženi su privredna diverzifikacija i povećanje atraktivnosti proizvoda i radnih mesta, a od kojih se očekuje da pozitivno utiču na širenje znanja, marketing proizvoda i pristupačnost tržištu. Na kraju, perspektive održivog razvoja SPP na polju infrastrukture predložene su kroz obezbeđivanje putne infrastrukture, modernizaciju obrazovanja i snabdevanje/osposobljavanje informaciono telekomunikacionim tehnologijama.

ZUSAMMENFASSUNG

Ausgehend von der Hypothese, dass *europäische Länder bereits vielfältige Erfahrungen mit der Bewältigung von Problemen in ihren Berggebieten* haben, ist die vorliegende Forschungsarbeit als länderübergreifende Fallstudie angelegt worden. In einem ersten, exploratorisch-deskriptiven Teil der Forschungsarbeit werden die größten europäischen Gebirgsmassive vorgestellt. Es wird herausgearbeitet, wie sich Probleme in serbischen [SBG] und anderen europäischen Berggebieten [EBG] ähneln und auf welche Art und Weise sich die einzelnen Länder mit ihren Berggebieten auseinandersetzen. Dies geschieht in der Absicht, Wege aufzuzeigen, wie eine nachhaltige Entwicklung der Berggebiete in Serbien angegangen werden könnte. Daten aus verschiedenen Quellen sind zu diesem Zweck ausgewertet worden, wodurch auch die Prüfung der Daten, d.h. ihre Triangulation möglich war. Im Falle der SBG wurden Daten aus zwei verfügbaren Quellen herangezogen. Außerdem sind Interviews mit Fachexperten, Behörden und den Bewohnern in vier Gemeinden geführt worden. Zu den EBG sind verfügbare Daten aus der Literatur genutzt worden. Sowohl qualitative als auch quantitative Daten sind in die Analyse einbezogen worden.

Fünf Kategorien von Problemen konnten auf diese Weise herausgearbeitet werden: ökologische, demographische, infrastrukturelle, wirtschaftliche und administrative Probleme. Es konnte gezeigt werden, dass die SBG und die EBG vor allem in Bezug auf die Umwelt und die Demographie Ähnlichkeiten besitzen. Unterschiede zeigten sich vor allem in Bezug auf Fragen der Wirtschaft, der physischen Zugänglichkeit, der infrastrukturellen Ausstattung und der Verwaltung. Das Gebirgsmassiv im Balkan und den Karpaten besitzt die größte Ähnlichkeit mit den SBG. Im Gegensatz dazu, zeigten die Alpen wesentlich geringere Probleme, da diese seit einem längeren Zeitraum angegangen werden.

Im darauffolgenden, analytischen Teil der Arbeit werden zu jeder der identifizierten Problemkategorien in Serbien kurzfristig umsetzbare Entwicklungsprinzipien, Instrumente und Maßnahme vorgeschlagen. Herausgestellt werden folgende Aspekte: Serbien braucht mehr Entscheidungsbefugnis unterhalb der nationalen Ebene, es braucht besondere Instrumente zur Bewältigung der Probleme seiner Berggebiete sowie eigene Ansätze zu deren Umsetzung. Der größten Differenzen zwischen EBG und SBG werden im Bereich der Verwaltung gesehen, da Serbien hier bisher die wenigsten Anstrengungen unternommen hat.

Im letzten Teil der Arbeit werden Perspektiven für die nachhaltige Entwicklung der SBG aufgezeigt, aufgeteilt in drei mögliche Haupthandlungsfelder– Verwaltung, Infrastruktur und Wirtschaft. Außerdem werden Maßnahmen vorgeschlagen, die alle Problemfelder übergreifen. Dazu gehören die Bezugnahme von Stadt und Land sowie die Aktivierung zivilen und ehrenamtlichen Engagements innerhalb der SBG. Für den Bereich der Verwaltung werden die aktive Einbeziehung der lokalen Bevölkerung, die verantwortungsvolle Umsetzung planerischer Entscheidungsprozesse – von der Forschung bis hin zur Evaluierung – sowie die Einrichtung eines besonderen Status für die SBG als notwendig für deren nachhaltige Entwicklung erachtet. Für den Bereich der Wirtschaft werden Diversifikation, die qualitative Verbesserung von Erzeugnissen sowie die Steigerung des Angebotes attraktiver Arbeitsplätze als Entwicklungsmöglichkeiten vorgeschlagen, da diese voraussichtlich positiv auf die Verbreitung von Wissen, Produktmarketing und die Zugänglichkeit zu den Märkten wirken. Darüber hinaus werden für nachhaltige Entwicklungsperspektiven der SBG in Bezug auf die Erreichbarkeit und die Infrastruktur die Einrichtung von Straßen, die Modernisierung von Bildungseinrichtungen und die Einrichtung von Informations- und Kommunikationswegen angeregt.

LIST OF ABBREVIATIONS

AEP	Agency for Environmental Protection
BDMRRC	Berchtesgaden Declaration on Mountain Range Regional Cooperation
BFS	Balkan Foundation for the Sustainable Development
CEMAT	European Conference of Ministers Responsible for Regional Planning
DEM	Digital elevation model
EC	European Commission
EEA	European Environmental Agency
EED	European Election Database
EIB	European Investment Bank
EMA	European Mountain Areas
EPO	Eurostat Press Office
ESDP	European Spatial Development Perspective
EU	European Union
EU-MTD	European Union Ministers Responsible for Territorial Development
EURAC	European Academy of Bolzano
FAO	Food and Agriculture Organisation
FORP	Free Online Research Papers
FUA	Functional urban area
GDP	Gross domestic product
GRS	Government of Republic of Serbia
IAUS	Institute of Architecture and Urban & Spatial Planning of Serbia
ICT	Information and communication technology
IEF	International Environment Forum
IPA	Instrument for Pre-Accession Assistance
IPCC	Intergovernmental Panel for Climate Change
IRU	International Road Transport Union
LER	Local elevation range
MAWDB	Mountain Area Workforce Development Board
MEGA	Municipal Economic Growth Activity
MLSPRS	Ministry of Labour and Social Policy of Republic of Serbia
NGO	Non governmental organisation
NORDREGIO	Nordic Centre for Spatial Development
PSAC	Permanent Secretariat of the Alpine Convention
RASP	Republic Agency for Spatial Planning of the Republic of Serbia
RSO	Romanian Statistical Office
SARD-M	Sustainable Agriculture and Rural Development in Mountain Regions
SEE	South-Eastern Europe

SMA	Serbian Mountain Areas
SORS	Statistical Office of the Republic of Serbia
TCD	Trade Council of Denmark
UCA	University of Central Asia
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USAID	United States Agency for International Development
VASICA	Visions and Strategies in the Carpathian Area
WCMC	World Conservation Monitoring Centre

INDEX OF GRAPHS

Graph 2-1: Functions of Mountain Areas.....	3
Graph 3-1: Stages of Exploratory Research.....	22
Graph 3-2: The Phases and the Elements of the Research Design	23
Graph 4-1: EMA - Average Population Density, inhabitants per km ² (2001*).....	46
Graph 6-1: Stages of Development Management	131
Graph 7-1: Development Perspectives of Serbian Mountain Areas	158

INDEX OF MAPS

Map 2-1: Mountains of Europe	6
Map 2-2: European Mountain Ranges	7
Map 3-1a and 3-1b: Mountains and Mountain Ranges of Serbia.....	32
Map 4-1: SMA – Erosion and the Other Natural Hazards (2008).....	37
Map 4-2: SMA – Environmental Quality (2008)	41
Map 4-3: EMA and SMA - Population Density, Inhabitants per km ² (2001*)	47
Map 4-4: EMA and SMA – Total Population Change (1991-2001*).....	51
Map 4-5: SMA – Emptied Settlements and Villages with less than ten Inhabitants (1991-2007).....	52
Map 4-6: SMA - Demographic Age (2002)	54
Map 4-7: EMA and SMA – Proportion of Unemployment per Massif Compared with National Average (2001)	60
Map 4-8: EMA - Density of Motorways per Massif, km/km ² (2004).....	69
Map 4-9: EMA - Density of Railways per Massif, km/km ² (2002)	71
Map 4-10: SMA – Railway Quality per Municipality (2006)	72

INDEX OF TABLES

Table 2-1: EMA - Criteria for Defining a Mountain Area.....	4
Table 2-2: Italy (Lombardy) - Criteria for Delimitation of a Mountain Area in the Regional Mountain Law.....	5
Table 2-3: UNEP-WCMC Criteria for Delineation of Mountains	8
Table 2-4: The European Commission Criteria for Mountain Areas	9

Table 3-1: SMA - Mountains and Mountain Areas, Comparison of Basic Data	33
Table 4-1: EMA and SMA - Area, Population Number and Population Density (2001)	45
Table 4-2: SMA - Change in Population Size and Population Density (1948-2002)	48
Table 4-3: EU27 and Serbia - Indicators on Demographic Age (2002)	53
Table 4-4: SMA – Change in Forest- and Agricultural- Land, % (1996-2007)	59
Table 4-5: SMA – Monthly Incomes per Capita and per Employee for Different Economic Sectors, EURO and % (2008)*	62
Table 4-6: SMA – Distribution of Income per Employee in Chosen Activities, EURO (2008)*	63
Table 4-7: SMA – Average Demographic Age (2002)	65
Table 4-8: SMA – Illiteracy and Education Structure of Population, % (2002)	66
Table 4-9: European Mountain Countries - Average Size of Local Administrative Units (2010*)	83
Table 4-10: European Mountain Countries – Corruption, Corruption Perception Index [CPI] (2009)	85
Table 6-1: Aspects of Instrument Application	137

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
SUMMARY	iii
REZIME	iv
ZUSAMMENFASSUNG	v
LIST OF ABBREVIATIONS	vi
INDEX OF GRAPHS	viii
INDEX OF MAPS	viii
INDEX OF TABLES	viii
 1 INTRODUCTION.....	 1
 2 KEY ISSUES IN RESEARCH AND PRACTICE ON MOUNTAIN AREAS.....	 3
2.1 Discussion on the Definition of Mountain Areas	4
2.1.1 Definitions of Mountain Areas in Europe	4
2.1.2 Definitions of Mountain Areas in Serbia	9
2.2 The Natural Value of European Mountain Areas	11
2.3 The Value of Anthropogenic Resources in European Mountain Areas.....	13
2.4 Mountain Areas between Conservation, Uncontrolled Use and Preservation	15
2.4.1 Conservation	16
2.4.2 Uncontrolled use	16
2.4.3 Preservation	17
2.4.4 New Development Perspectives for Serbian Mountain Areas	18
2.5 The Problem Statement	19
 3 METHODOLOGY	 22
3.1 Research Design	22
3.2 Data Collection Methods.....	24
3.2.1 Data Analysis from Available Literature.....	25
3.2.2 Interviews with Experts, Local Authorities and Local Populations and a Selection of Cases.....	26
3.2.2.1 First Round – National Level	27
3.2.2.2 Second Round – Municipal Level	28
3.2.2.3 Third Round – Households in Villages.....	29
3.2.2.4 Additional Round of Interviews and Collection of Information.....	29
3.3 Data Analysis Methods.....	30
3.4 Definition of Study Area	31
3.5 Limitations	33

4	PROBLEMS AND CHALLENGES IN SERBIAN MOUNTAIN AREAS	35
4.1	The Use of Nature and Environmental Problems.....	35
4.1.1	Air Pollution – Repercussion of Outdated Industrial Technology.....	35
4.1.2	Soil Degradation – Geographical Preconditions and Man-Made Results....	36
4.1.3	Water Pollution – a Victim of Superficial Monitoring Practice	39
4.1.4	Biodiversity Degradation – Call for Prompt Action for Controlled and Responsible Management.....	40
4.1.5	Negligence of Landscape Values – Threat to both Ecological and Economic Functions	43
4.2	Demographic Trends and their Impacts.....	44
4.2.1	Low Population Density – Challenge for Infrastructural Endowment and Social Relations.....	44
4.2.2	Emigration and Low Birth-Rate – Weakening of Human Resources.....	49
4.2.3	Aged Population Structure – Increased Needs for Social Care and Reduced Human Capacity	53
4.2.4	Gender Imbalance – an Obstacle for Family Formation and Securing Posterity	55
4.3	Economic Development	56
4.3.1	Specific Geographic Conditions – Dependence on Natural Factors, Increased Construction and Maintenance Costs	56
4.3.2	Economic Transition – Effects of Delay.....	57
4.3.3	Land Abandonment –Negligence of Resources	58
4.3.4	Unemployment – a Call for Changes.....	60
4.3.5	Under-Average Incomes – a Constraint to Attractiveness and Development	61
4.3.6	Product Market – Lack of Competitiveness of Products and Accessibility to Markets	64
4.3.7	Low Profiled Labour Market and Labour Competence – Aged Population Hinders Innovativeness and Adoption of Contemporary Knowledge	65
4.4	Accessibility and Infrastructure	67
4.4.1	Technical Infrastructure	67
4.4.1.1	Low Accessibility, Quality and Maintenance of Roads – Reduced Mobility of Population and Products	67
4.4.1.2	Low Accessibility and Quality of Railways – Dilemma between Construction Costs and Benefits to Environmental Protection	70
4.4.1.3	Lack of Water and Sewage Supply – Impaired Life Quality and Threat to the Environment	72
4.4.1.4	Lack of Electricity Coverage – Threat to Basic Needs of a Contemporary Society and to Economic Development	73
4.4.1.5	Low Quality of Communication Services – Hindered Knowledge and Information Flow.....	74
4.4.1.6	Lack of Waste Management – Threat to the Environment	75

4.4.2	Social Infrastructure	76
4.4.2.1	Lack of Facilities for Education, Culture and Entertainment – Social Exclusion with Regard to Knowledge and Culture	77
4.4.2.2	Low Accessibility and Quality of Health Care – An Impairing Factor on Life Quality	78
4.4.2.3	Insufficient Infrastructural Capacity in Care for Elderly – Negligence of Needs for the Most Numerous Part of the Population	79
4.5	Management Approaches to Mountain Areas.....	80
4.5.1	Centralised Government Model – Time-Consuming and Needs Non-Matching Decision-Making.....	81
4.5.2	Large Municipalities – Superficial Responses Inadequate to Mountain Population Vision	82
4.5.3	Absence of Transparency and Unresolved Conflict of Interests – Management Independent on Needs of Mountain Communities	83
4.5.4	Unspecialised Institutions and Inadequate Staff Structure – Bases for Unsuccessful Mountain Area Management.....	85
4.5.5	Uncoordinated and Unsynchronized Institutions and Documents – Confusion Impairing Implementation of Plans	87
4.6	Summary.....	89
5	RESPONSES TO PROBLEMS IN SERBIAN AND OTHER EUROPEAN MOUNTAIN AREAS	91
5.1	Instruments for Mountain Area Development and Management.....	91
5.1.1	Legislation on Mountain Areas – Instrument for Detailed, Obligatory and Internationally Cooperated Development	92
5.1.2	Institution-Building in Mountain Areas – Explicit Treatment Requires Explicit Actors	95
5.1.3	Financial Management of Mountain Areas – Bringing Measures into Actions	98
5.1.4	Strategic and Spatial Planning on Mountain Areas – Creating a Vision for Mountain Area Development	100
5.1.5	Local Population Participation and Local Initiatives – Activation of the Local Community, Resources and Raising of Identity	103
5.2	Principles and Measures on Mountain Area Development and Management	106
5.2.1	Environmental Protection	106
5.2.2	Demographic Decline	109
5.2.3	Economic Opportunities.....	112
5.2.4	Accessibility and Infrastructure Systems	116
5.2.5	Mountain Area Management.....	119
5.3	Summary.....	125

6	TOWARDS ENHANCEMENT OF SUSTAINABLE USE AND SOCIO-ECONOMIC DEVELOPMENT IN SERBIAN MOUNTAIN AREAS	126
6.1	Enhancement of Serbian Mountain Area Management	127
6.1.1	Improvement of Existing Instruments	127
6.1.1.1	Role and Improvement of Legislation on Serbian Mountain Areas	127
6.1.1.2	Role and Improvement of Institutional Framework on Serbian Mountain Areas.....	129
6.1.1.3	Role and Improvement of Financial Management of Serbian Mountain Areas.....	131
6.1.1.4	Role and Improvement of the Strategic and Spatial Planning of Serbian Mountain Areas	135
6.1.1.5	Aspects of Instrument Application – Towards Enhancement of Serbian Mountain Area Management	137
6.1.2	Establishing Instruments	138
6.1.2.1	Active Participation of the Local Population.....	138
6.1.2.2	Assignment of Special Status to Serbian Mountain Areas and their Population	140
6.2	Role and Enhancement of Accessibility and Infrastructure in Serbian Mountain Areas.....	142
6.2.1	Enhancement of Serbian Mountain Area Transport Infrastructure	143
6.2.2	Human Resource Improvement by Knowledge, Education and Innovativeness in Serbian Mountain Areas	146
6.3	Transformation of Opportunities - Diversification of Economic Activities and Improved Attractiveness of Mountain Products.....	152
6.4	Summary.....	156
7	DEVELOPMENT PERSPECTIVES FOR SERBIAN MOUNTAIN AREAS.....	157
7.1	Final Empirical Results	158
7.1.1	Development Perspectives in the Field of Management.....	159
7.1.1.1	Active Local Population Participation	159
7.1.1.2	Responsible Realisation of the Full Management Cycle - from Research to Evaluation.....	159
7.1.1.3	Special Status of Serbian Mountain Areas	160
7.1.2	Development Perspectives for Serbian Mountain Areas in the Field of Infrastructure	160
7.1.2.1	Endowment of Roads.....	160
7.1.2.2	Modernisation of Education	161
7.1.2.3	Endowment of ICT.....	161
7.1.3	Development Perspectives for Serbian Mountain Areas in the Field of Economics.....	162

7.1.3.1	Diversification by Compatible and Complementary Activities	162
7.1.3.2	Attractiveness of Products and Jobs	162
7.1.4	General Fields of Development Perspectives for Serbian Mountain Areas	163
7.1.4.1	Urban-Rural Interdependence	163
7.1.4.2	Activation of Civil Sector and Volunteers	163
7.2	Implications of the Results	164
7.2.1	Scientific Research	164
7.2.2	Political Advisory and Spatial Planning	165
7.3	Final Considerations	165
8	REFERENCE LIST.....	168

1 INTRODUCTION

The distribution of natural resources, cultural patterns and demographic structures differentiates over the whole of Serbia. Thus, rural areas differ from urban areas, hilly and mountainous areas from lowland areas. One of the differences relates to more severe demographic change in mountain areas where settlements are becoming communities of elderly individuals (with no reproductive perspective) or they are even completely emptied. The second difference is that, due to their isolation, Serbian mountain areas have more preserved natural riches, which are reservoirs of woods, water and biodiversity. Thirdly, the isolation of a great number of small settlements has preserved traditional patterns of production, life-style and architecture.

So, the problem is that, due to demographic and economic devastation, the territorial cohesion and spatial balance of Serbia have been impaired. The human resources and development potential of the local communities have been weakened, finally undermining the general development of Serbia, while natural systems are locally, but excessively used, thus affecting their sustainability. Therefore, Serbian mountain areas have become more of a focus for spatial planning practices than previously. However, the recent developments in mountain areas are still insignificant and require further improvements.

In order to contribute to the required improvement, this research explores the sustainable development perspectives for Serbian mountain areas. The starting point was an assumption that outside of Serbia, in the European context, there are a greater number of responses to problems in mountain areas, developed and practised longer than in the case of Serbian mountain areas. Based on that assumption, the problems and responses to the problems were traced in the practice of Serbia and other European mountain countries, resulting in suggestions for the development perspectives for Serbian mountain areas in a sustainable manner.

The obtained results can contribute to several fields. Firstly, the results represent a base of data and facts on which political decisions concerning the management and development of Serbian mountain areas can be based - in the future creation of population policy and policies on the protection of cultural and natural heritage. Secondly, the results contribute to the field of spatial planning, indicating potential changes in the process of planning itself as well as helping the choice of responses and measures in any future spatial plans. Thirdly, the content and results of this dissertation should assist the local population in Serbian mountain areas. Namely, the results can help them to understand the relationship between the problems they are exposed to and their mitigation and reduction; they can also gain better understanding of what their role should and could be, finally hoping that this will encourage the population to become an active part in the future development of Serbian mountain areas. Finally, due to being published in English, it can be expected that other European countries, which are at a similar level of mountain area development, can learn from the results of this research, too.

The problems and responses to the problems are collected from multiple sources, including international and national documents, studies, reports, scientific articles, newspapers and, in

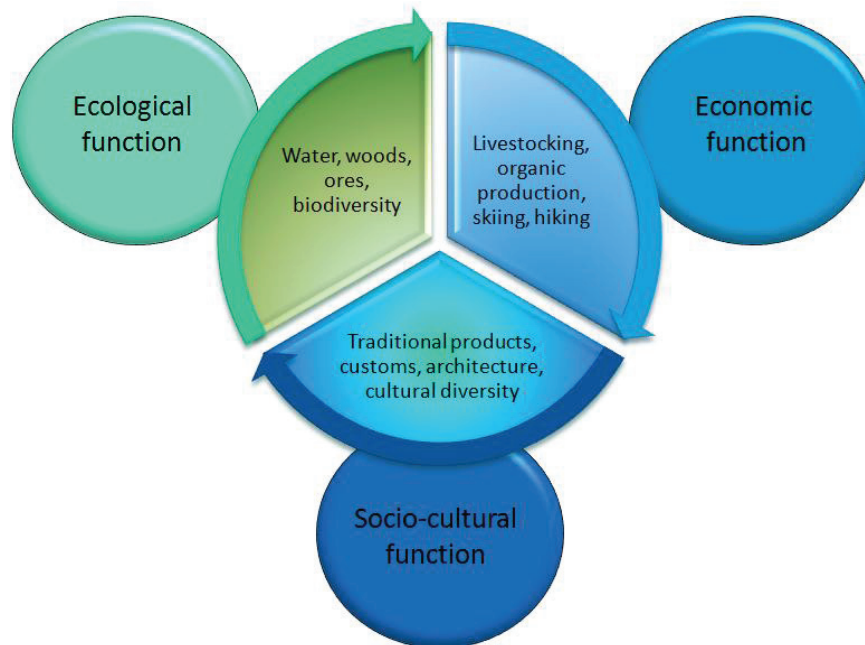
the case of Serbian mountain areas, interviews conducted in several phases with national and local authorities, experts and the local population in villages from four case municipalities.

This chapter is followed by seven other chapters. The second chapter gives an insight into key issues on mountain areas world-wide, but particularly in Serbia, and introduces the reader to the problem statement of the research, research questions and hypothesis. The third chapter presents the research design and methods. The fourth, fifth and sixth chapters correspond to three research sub-questions, each dealing with the problems in European mountain areas, responses to the problems and enhancement of the sustainable development of Serbian mountain areas, respectively. In the seventh chapter, the results obtained from the three research questions are put together, forming an answer to the main research question on the development perspectives of Serbian mountain areas and highlighting the research implications. Finally, the eighth chapter finishes the study by listing the references and sources addressed in this research.

2 KEY ISSUES IN RESEARCH AND PRACTICE ON MOUNTAIN AREAS

Mountain areas are specific with regard to their geographic conditions that make their accessibility difficult at times. Being isolated has made it possible for mountain areas to keep their specific character as well as hide their riches and resources. For this reason, mountain areas are seen as “... an exceptional potential for Europe and fulfil numerous ecological, economic, social, cultural and agricultural functions” where a “spatial development policy should give special and suitable consideration to the preservation and development of mountain regions” (CEMAT, 2000, p. 14). Therefore, there is the recognition of the advantages and value of mountain areas on the one hand and indicated significance of both preservation and development on the other hand. Due to their multiple advantages and functions – fresh water, ores, woods, biodiversity, traditional production and cultural diversity reservoirs (Graph 2-1) – the development of mountain areas should be undertaken in a way whereby those advantages will be preserved.

Graph 2-1: Functions of Mountain Areas



Source: elaborated by the author

Regarding the basic functions of mountain areas, the European literature discusses a series of issues. One of them is the discussion on the definition and delineation of mountain areas, which is a particular challenge to coordinate at an international level. Next, there are discussions about natural riches of mountain areas which are considered as their main advantage and anthropogenic elements that are human-made and human-based, but going through severe changes. Finally, considering the balance between the natural and anthropogenic aspects of mountain areas, scientists and policy-makers have opened discussion on sustainable development. The role of this chapter is to present the current discussions on mountain areas in Europe and Serbia.

2.1 Discussion on the Definition of Mountain Areas

2.1.1 Definitions of Mountain Areas in Europe

The first definitions of mountain areas were established at a national level in the second half of the 20th century (Price, Lysenko, Gloersen, 2004). Those definitions were used for projects perceiving mountains from different perspectives; therefore, different project aims required different definitions. The specifically mountain oriented legislation defined mountain areas at a national level, thus preparing it universally for every future use. Firstly, this was the case in France (1961), Italy (1971) and Switzerland (1974) and within the last two decades also in Bulgaria (1993), Ukraine (1995), Spain (2002) and Romania (2002 and 2004) (Castelein et al., 2006). As a result of the overall geographic condition of a country and the goals for which they were needed, definitions of mountain areas varied from country to country (Table 2-1).

Table 2-1: EMA - Criteria for Defining a Mountain Area

Country	Minimum Elevation	Additional Criteria
Albania	650 m	
Austria	700 m	also above 500 m if slope >20 %
Belgium	300 m	
Croatia	650 m	
France	700 m (generally) 600 m (Vosges) 800 m (Mediterranean)	slope >20 % over >80 % of area
Germany	700 m	climate difficulties
Greece	800 m	also 600 m if slope >16 %; below 600 m if slope >20 %
Ireland	200 m	
Italy	600 m	altitudinal difference > 600 m
Norway	600 m	
Portugal	700 m (north of the Tejo river) 800 m (south of the Tejo river)	slope >25 %
Spain	1000 m	slope >20 %, elevation gain 400 m
UK	240 m	
Bulgaria	600m	also >200m altitudinal difference/km ² ; or slope >12°
Cyprus	800 m	also above 500 m if average slope >15 %
Czech Republic	700 m	
Hungary	600 m	also above 400 m if average slope >10 %; or average slope >20 %
Poland	350 m	or >12° for >50% of agricultural land in a municipality
Romania	600 m	also on slopes >20°
Slovakia	600 m	above 500 m on slopes >7°; or average slope >12°
Slovenia	700 m	also above 500 m if more than half the farmland is on slopes of >15 %; or slope > 20 %

Source: national reports published in the NORDREGIO study (EC, 2004); European Observatory of Mountain Forests (2000); Copus, Price (2002)

Some European mountain countries have more than one definition of the Alpine area within their national territory. Two examples are the German state of Bavaria and the Italian mountain region, Lombardy (European Academy of Bolzano [EURAC], 2006).

Table 2-2: Italy (Lombardy) - Criteria for Delimitation of a Mountain Area in the Regional Mountain Law¹

Criteria	Description
Territory	$\leq 10 \text{ km}^2$, $> 10 \text{ km}^2$ and $\leq 40 \text{ km}^2$, $> 40 \text{ km}^2$
Inhabitants	> 3.000 , 500 and ≤ 3.000 , ≤ 500
Depopulation	≥ 0 , < 0 and $\geq -5 \%$, $< -5 \%$
Slope	Plane areas (slope $< 9^\circ$) $> 20 \%$ of total surface, Plane areas $< 20 \%$ of total surface and areas less or non-usable (slope $> 30^\circ$) $< 50 \%$ of total surface, Plane areas $< 20 \%$ of total surface and areas less or non-usable $> 50 \%$
Elevation of communal territory	60% of total surface at level $< 600 \text{ m}$, $< 60 \%$ of total surface level $< 600 \text{ m}$ and $< 60 \%$ at level $> 900 \text{ m}$, $> 60 \%$ of total surface at level $> 600 \text{ m}$
Accessibility*	Total distance $\leq 45 \text{ km}$, Total distance $> 45 \text{ km}$ and $\leq 80 \text{ km}$, Total distance $> 80 \text{ km}$
Overnight stays at tourist accommodation	> 50.000 , > 5.000 and ≤ 50.000 , ≤ 5.000
Extra-agricultural activities**	$> 95 \%$, $> 85 \%$ and $\leq 95 \%$, $\leq 85 \%$
Elevation of the main communal city	≤ 450 above sea level $> 450 \text{ m}$ and $\leq 800 \text{ m}$ above sea level

*This is the total distance between the main city of the municipality and the main city of the province.

**Percentage of employees in sectors outside of agriculture to the total percentage of employees.

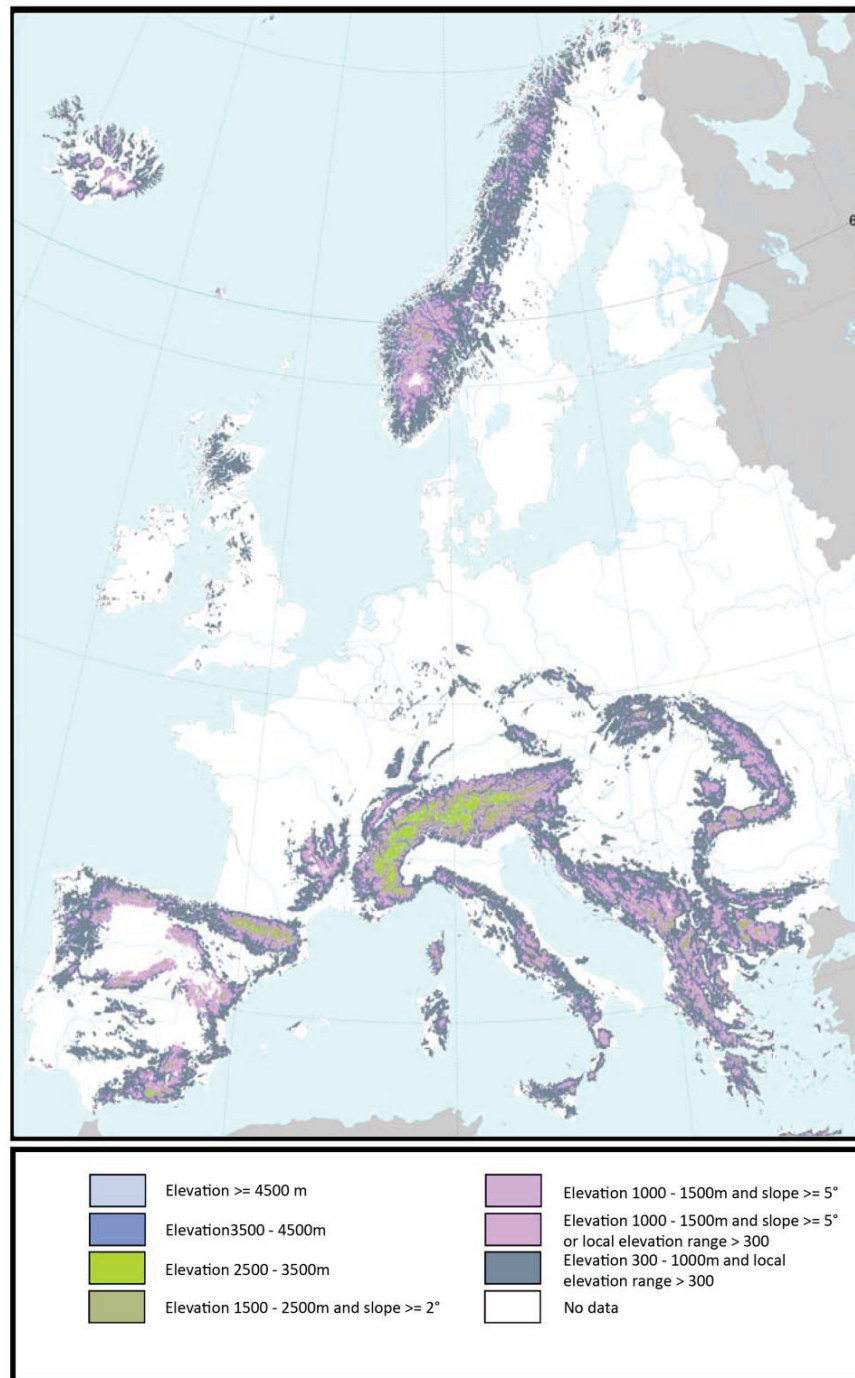
Source: EURAC, 2006

In case of the Lombardy region (Italy), the delimitation of mountain areas is based, not only on topographic and climate criteria, but on the whole range – geographic, demographic, economic, social and territorial division. In the Lombardy case, the delimitation of mountain areas has been carried out simultaneously with categorisation of municipalities into three categories. Namely, each criterion is given three ranges of values, each bringing a different amount of

¹ No 10/1998 “Disposizioni per la valorizzazione, lo sviluppo e la tutela del territorio montano in attuazione della legge 97/1994”.

points; so, the final point score for each municipality helps to classify them into three categories with regard to difficulty (Table 2-2) (EURAC, 2006).

Map 2-1: Mountains of Europe

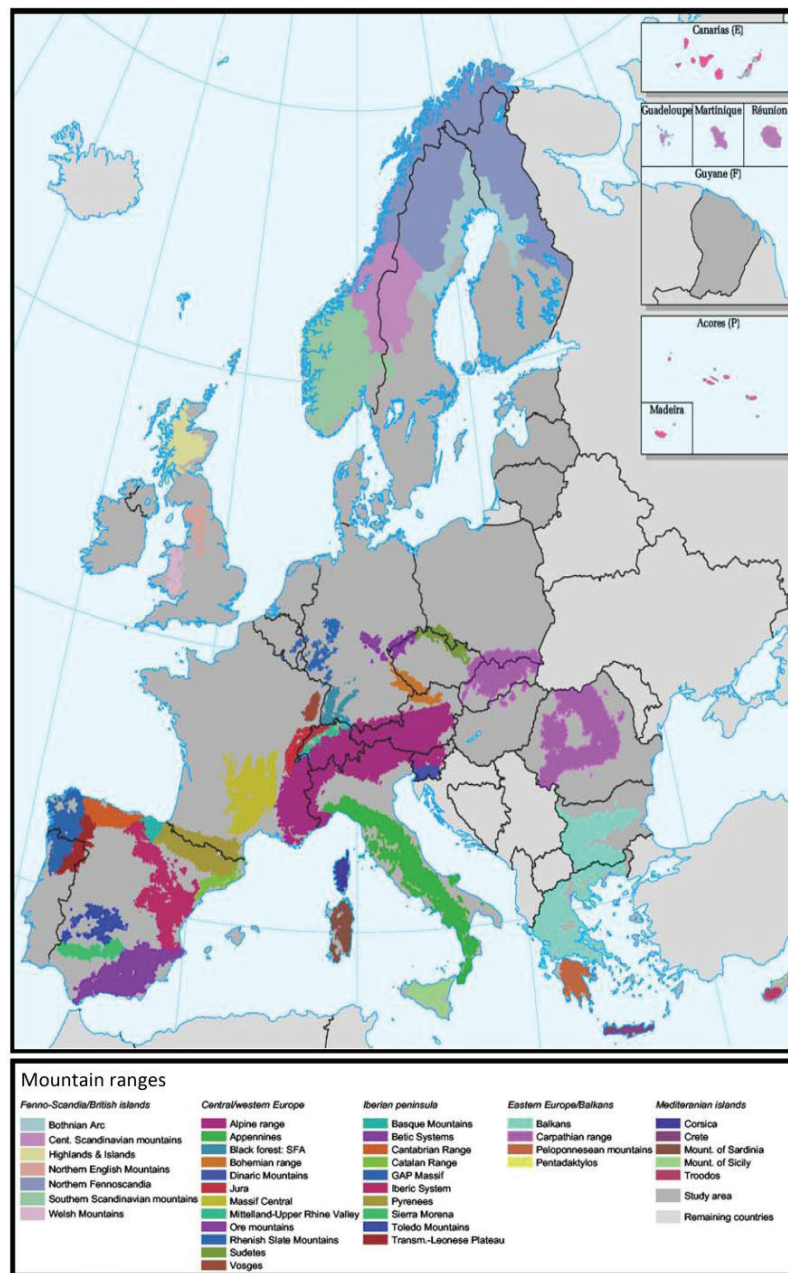


Source: map originally prepared by S. Blyth using UNEP - World Conservation Monitoring Centre [WCMC] 2000 global delineation, taken from the NORDREGIO study (EC, 2004)

Nevertheless, the need for a universal European definition emerged from international projects and funds firstly within the European Economic Community and then the European Union. The importance of unified definition criteria was pointed out in order to provide truly comparable

areas. A study on delimitation of the Carpathian Convention area (2006) also argues the advantages and necessity for a definition based on the same or similar criteria.

Map 2-2: European Mountain Ranges



Source: based on UNEP-WCMC 2000 global delineation, taken from the NORDREGIO study (EC, 2004)

As such projects and funds usually cover certain topics, the definitions of mountain areas were adjusted accordingly. Therefore, the Directive 75/268/EEC on Mountain and Hill-Farming in Less-Favoured Areas (1975) gave the first definition on a European scale. The same definition was used in Article 18 of the European Council regulation No 1257/1999 for rural development support (European Council, 1999), but both addressed mountain areas from the perspective of agriculture and gave an imprecise delimitation. Namely, they characterised mountain areas as

areas with difficulties in agricultural production, and regarded the climate at high altitudes and the topography as a handicap for the use of machinery at lower altitudes and areas further north than the 62nd parallel. Similarly, the Committee on Agriculture of the European Parliament described mountain areas imprecisely (European Parliament, 2001), leaving it open as to what high altitude, difficult climate conditions and rough topography exactly stand for, especially considering that mountain areas are not only to be understood in the context of agricultural production.

In 1996, the US Geological Survey created a digital elevation model [DEM] for the whole of the Earth's surface, mapping the altitude and slopes for each square km (local elevation range [LER]). In the DEM, which can be understood as a group of points at a distance from each other of 1 km², the LER was measured between each point and its surrounding points that were called cardinal points. This was a crucial database used by the UNEP-World Conservation Monitoring Centre (2000) to develop significantly more precise delineation of mountains (Map 2-1). Kapos et al. (2000) set the delineation criteria within this project, which are shown in the following table (Table 2-3):

Table 2-3: UNEP-WCMC Criteria for Delineation of Mountains

Class (elevation in metres)	Additional Criteria
> 2,500	
1,500-2,499	> 2° slope within 3 km radius
1,000-1,499	>5° slope within 3 km radius and/or 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

Source: Kapos et al. (2000)

In spite of the UNEP-WCMC (Kapos et al., 2000) delineation precision, it defines only mountains as topographic entities, which was not applicable for data collection, data interpretation and policy making. For those, having an administrative greed (borders of municipalities and regions) covering topographically defined mountains was necessary. Since a perfect overlap of mountains with the greed of administrative (statistical and political) units is not possible, it becomes clear that there is a difference between mountains and mountain areas. While mountains are defined by topographic criteria, mountain areas are delineated by the greed of administrative units, so that they embrace all the mountains, but also comprising the valleys, hills or even lowland. Therefore, the Directorate-General for Regional Policy adjusted the previous criteria to be more efficient for researchers and policy makers (European Commission, 2004).

As shown in Table 2-4, the delineation of European mountain areas includes high altitude areas, but also low altitude areas with rough topography and those with a cold climate. Also the European Commission delineation of mountain areas included non-mountainous areas within massifs if they were less than 5 km² and excluded mountainous areas if they were less than 5 km². Finally, only municipalities with more than 50 % of mountainous territory (as defined by UNEP-WCMC) were considered as part of a mountain area (Map 2-2).

Table 2-4: The European Commission Criteria for Mountain Areas

Main Criteria (elevation)	Additional Criteria
> 2,500 m	
1,500-2,99 m	Standard deviation elevation > 50 m between a point and its surrounding 8 cardinal points or LER within 7 km radius \geq 300 m and \geq 2° slope between each point and 8 cardinal points
1,000-1,500 m	Standard deviation elevation > 50 m between a point and its surrounding 8 cardinal points or LER within 7 km radius \geq 300 m and \geq 5° slope between each point and its surrounding 8 cardinal points
300-1,000 m	Standard deviation elevation > 50 m between a point and its surrounding 8 cardinal points or LER within 7 km radius \geq 300 m
0-300 m	Standard deviation elevation > 50 m between 8 cardinal points (in 1 km ²) and Temperature contrast index "K" < 0.25

Source: European Commission (2004)

Finally, the NORDREGIO study is a world-wide unique study with regard to efforts shown to develop universal definitions of mountains and mountain areas grounded on the attempts of different authors to set a common definition. Even though Serbia did not participate in the project, a great number of data shown in the study were used for this research; therefore, adjusting the definition of Serbian mountain areas in this dissertation was one of the primary aims next to the other criteria.

2.1.2 Definitions of Mountain Areas in Serbia

There are a few definitions of mountains and mountain areas used in Serbia: by orographic classification of altitude (above sea level), mountains are above 500 m (Gavrilović, Gavrilović, 2002); 500 m and above is also taken as a limitation of mountains used by the Ministry of Agriculture, Forestry and Water Management in order to facilitate certain forms of support in marginalised areas²; territory above 600 m is considered mountainous in the Spatial Plan of the Republic of Serbia and the scientific project the Sustainable Development on Mountain Areas in Serbia (Malobabić, Bakić, 2003). Besides altitude, this project took administrative-political division as an additional criterion.

As a project - the *Sustainable Development of Mountain Areas in Serbia* started in 2002, conducted by the Institute of Architecture and Urban & Spatial Planning of Serbia [IAUS], a definition of Serbian mountain area was needed. Therefore, an analytical and statistical database on mountain areas was formed and, in the first step, mountains were defined orographically, according to elevation as a criterion (above 600 m); then, in the next step those

² According to an interview with the Advisor for Drafting the Development Criteria and Assessing the Level of Development, Department for Analysis and Regional Development Policy, Ministry of Economic and Regional Development, conducted in June 2009.

areas were overlapped with the land use plans and greed of political-administrative units (cadastral and administrative municipalities) (Jokić, 2004). However, not all participants in the project used the same definition of Serbian mountain areas. Namely, O. Dželebdžić and V. Jokić (2003) analyse mountain areas on the level of 78 mountain municipalities (2,068 cadastral municipalities). The criterion for the inclusion of a municipality was the presence of mountains in its territory, regardless of their share of the total area. Alternatively, R. Malobabić and O. Bakić (2003) consider only cadastral municipalities which have greater than 50 % of their area over 600 m as a mountain area, which makes a total of 1,522 cadastral municipalities distributed in 67 municipalities. Lastly, analysing the economic capacities of mountain meadows and pastures, M. Nikolić (2003) defined mountain areas as above an altitude of 800 m.

In his dissertation, S. Milijić (2005) differentiates Serbian mountains from Serbian mountain areas. He defines mountains as Serbian territory above 600 m and mountain municipalities as those which include mountains in their territory³. In contrast to the Sustainable Development of Mountain Areas in Serbia project, Milijić included the mountains of Kosovo and Metohija together with mountains in Central Serbia. Fruška Gora (539 m), Vršачke Planine (614 m), Kosmaj (626) and Avala (511), even though considered as mountains in terms of some definitions, were excluded from both projects because of their territorial “isolation” from the other mountains and insignificant altitude above 500m.

Finally, a few years after signing the Carpathian Convention (2003), Serbia, as a member state, got the task to delimit Carpathian areas within its national territories, as did the rest of the Carpathian states. The authors of the delimitation in Serbia decided to limit Carpathian areas to the borders of the Đerdap National Park and the area closest to it (EURAC, 2006) in order to simplify the process, thus excluding a large part of the Carpathian territory. In contrast, Poland has chosen criteria of delimitation (counties with the majority of their territory above 300 m above sea level), thus widening the area to the highest extent. The authors of the definition in Serbia stated that the definition is based on geological diversity and biodiversity, thus neglecting the administrative-political division and excluding the larger part of the Carpathian massif in Serbia. An argument from the side of the authors is the unclear border between the Carpathian and Balkan Mountains (Ibid.). Indeed, a discussion on this topic has taken place, but it was based solely on the unclear affiliation of Samanjac, Rtanj, Tresibaba and Tupižnica mountains – which are part of the very south border between the massifs – but not on doubts about Homoljske Planine, Kučajske Planine, Beljanica, Mali Krš, Veliki Krš, Malinik and Deli Jovan mountains⁴. In order to indicate the magnitude of the territory left out, here are some facts: on

³ Originally, in his Dissertation, Milijić differentiated mountain areas from mountain municipalities. In course to avoid confusion, his term “mountain areas” is equalised with term “mountains”, as it was defined for the purpose of this Dissertation. Likewise, his term “mountain municipalities” is equalized with the term “mountain areas”.

⁴ Sources used are: Geography textbook for I and III grade in high school (Rodić, 1999); Geography text book for 8th Grade in Primary School (Milošević, 1994); webpage upoznajSrbiju.com; A Preliminary Bibliography on the Nature of the Carpathian Serbia (Jakšić, Randelović and Marjanović, 2004); Tourist-Informative Portal for Soko Banja, 2011). The following mountains are listed (if mentioned) in all sources as Carpathian: Homoljske, Beljanica, Kučaj, Miroč, Deli Jovan, Veliki Greben, Mali Krš, Veliki Krš, Majdanpečke planine, Malinik; and the following as Balkan Mountains: Ozren, Devica, Suva planina, Stara planina,

the one hand, 732 km² are taken as the Carpathian area for the Carpathian Convention, while on the other hand delimitation of the Carpathian massif in this dissertation is 6,833 km². It has been stated that delimitation depends on the goals and purpose, but that significant difference between and negligence of (in this case) crucial geomorphologic criteria can only indicate that task has not been seriously elaborated and, as a consequence, this part of the Carpathians and Serbia might lose all the benefits of cross-border cooperation. A common example used is the definition of the Alpine region for the Alpine Convention (1991) – integrating geomorphologic, administrative, political and functional criteria.

2.2 The Natural Value of European Mountain Areas

Almost a quarter of the all the continents is covered by mountains (Mountain Agenda, 2000) and nearly all European countries embrace at least some mountain areas (EC, 2004). About 17 % of the European population live in mountain areas (Corrado, 2011), in Serbia nearly 10 % in mountains and 41 % in mountain areas⁵. Nevertheless, mountains are generally considered important because not only mountain populations depend on their resources, but also half of humanity (Messerli, Ives, 1997; Mountain Agenda, 2000; United Nations Secretary, 2005).

Mountain areas are noted as areas of particular natural value. Due to their isolation, ecological systems are significantly preserved, keeping them as “centres of biological diversity and landscape value” (Bryden, Van Depoele, Espinosa, 2005, p. 3). Mountain areas gain particular credits for being reservoirs of fresh water, sanctuaries for wild animals and plants, natural obstacles for control of winds and precipitation as well as sources of renewable energy – wind and wood (European Environmental Agency [EEA], 1999; Price, Jansky, Iatsenia, 2004; Bryden, Van Depoele, Espinosa, 2005).

One of the most stressed advantages of mountain areas is their role as water reservoirs, also called “water towers”. Various authors - van H.J.A. Ginkel, M. Iyengararasan, L. Tianchi, S. Shrestha, P.K. Mool, M. Yoshino, and T. Watanabe - who contributed to the Key Issues for Mountain Areas (edited by Price, Jansky, Iatsenia, 2004) stress particularly this significance of mountain areas. Other authors such as Mountain Agenda (2000), J. Bryden, L. Van Depoele and S. Espinosa (2005), as well as discussion at the UN Climate Change Conference (2009) find mountain areas as the main source of fresh water that supports much more than solely the mountain population. In the EU context, R. Prodi (2002) mentioned the role of mountain waters as being 50 % of the water we consume from the water supply system.

In general, the water quality in Serbia is not satisfactory, but among the first and second class (best quality) streams are mountain rivers (GRS, 2010). The Serbian Water Quality Index (including 10 quality parameters) is calculated only for major watersheds. Nevertheless, the

Tresibaba, Svrlijske planine. In the textbook Geography for 8th grade in primary school, Tupižnica Mountain is mentioned as being on the border region between the Carpathian and Balkan Massifs, but with no specification as to which one it belongs; other sources do not mention Tupižnica at all. Additionally, the embracement of Rtanj Mountain is unclear: defined as a border mountain between the massifs in Geography for 8th grade, listed as Balkan Mountain in Geography for I and III grade, but in all other sources as a Carpathian mountain.

⁵ Detailed explanation of differentiation between term “mountains” and “mountain areas” is given on page 12.

results showed that watersheds predominantly collecting streams from mountain areas actually have better water quality (Agency for Environmental Protection, 2009 and 2011). Counting only water from mountain springs and streams, its mineral, biological and chemical composition is such that it can be immediately used for drinking (Gavrilović, Gavrilović, 2002). Additionally, the highest level of precipitation in Serbia falls in mountains (RASP, 2010), which emphasizes the role of mountains in the overall water regime.

Besides providing drinking water, mountain area resources also provide water for other uses: industry, irrigation, fishing, transportation and hydropower (Mountain Forum, 2008). With regard to hydropower, B. Messerli and J.D. Ives (1997) and the NORDREGIO study (EC, 2004) communicate the renewable energy sources of mountain waters as one of their significant features. Estimating the entire country's territory, the convenience of water energy use by small hydro-power systems in Serbia is the best on the fast mountain streams, which is considered valuable for local production of energy and a sustainable approach (Maksin et al., 2011). Even though the greatest potential for use of geo-thermal energy in Serbia is the Pannonian Plain, the springs with hottest water belong to the mountain areas: Vranje Spa (94 °C), Sijarina Spa (72 °C), Kuršumlija Spa (68 °C) (Rhodopians), Jošanica Spa (78 °C) and Novi Pazar Spa (50 °C) (Dinaric Alps) (Ibid.).

Another source of renewable energy characteristic for mountain areas is timber. Namely, due to the easier use of lowlands for agriculture and urbanisation, mountain areas have remained shelters for forests, as B. Messerli and J.D. Ives (1997), van Ginkel (2004), J. Bryden, L. Van Depoele, S. Espinosa (2005) and Mountain Forum Strategic Plan (2008) address. In the case of Serbia, 84 % of forested land is situated in mountain areas and only 16 % in lowlands (based on SORS, 2009a), therefore confirming the aforementioned claims. Besides other areas, specific mountain locations and particularly those above 800 m are evaluated to have the best performance with regard to wind energy (Maksin et al., 2011).

In addition to water, mountain areas are reservoirs of other energy sources such as ore (van Ginkel, 2004; Mountain Forum, 2008), but due to the devastating effect of their exploitation, biodiversity and scenic landscapes are more often stated as relevant advantages. Serbian mountain areas are also used for ore exploitation (Mitrović, 2002a), particularly in Carpathian Serbia where the mountains are of volcanic origin. Diverse ore types are widespread all over Serbian mountain regions: nickel is present in Mokra Gora; molybdenum in Mačkatika (Dinaric Alps); copper in Bor (Carpathians); oil shale in the Aleksinac region (Balkan Mountains); phosphates in Bosilegrad (Rhodopians) etc. (GRS, 2012).

B. Messerli and J.D. Ives (1997), Mountain Agenda (2000), M. Iyngararasan et al., NORDREGIO study (EC, 2004), J. Bryden, L. Van Depoele and S. Espinosa (2005), the Mountain Forum Strategic Plan (2008) and the UN Climate Change Conference (2009) strongly point out mountain areas as "biodiversity hotspots" and centers of biodiversity. According to the Mountain Agenda (2000), a characteristic of mountain areas is their higher biodiversity per unit than in lowlands and the majority of endemic species are particularly found there. Indeed, the Institute for Nature Conservation of Serbia (2011) provides the information that high mountains are areas where the highest biodiversity and number of endemic species are recorded in the

country. In favor of natural heritage in mountain areas is the fact that 30 % of protected areas are within mountains (United Nations Secretary, 2005). Gorges and canyons, which are inevitable parts of a mountainous mosaic, are refuges for endemic species in Serbia (GRS, 2011). The significance of mountainous biodiversity confirms sites included on UNESCO's World Heritage list, UNESCO's Man and Biosphere program, the Ramsar Convention, etc. (Ibid.). In addition to biodiversity, the mountain areas of Serbia are also valuable in terms of their geo-diversity: out of four zones nominated for the European Geoparks Network, three of them belong to mountain areas (Filipović, Jeftović, 2002; GRS, 2010).

As an outcome expected based on biodiversity, geo-diversity and cultural diversity, Serbian mountain areas are also diverse with regard to landscape (GRS, 2010). Mountain bogs, alpine areal, rocky areas, pastures and coniferous forests with endemic species all contribute to the scenic values of Serbian mountain areas.

Focusing particularly on Serbia, the Law on Nature Protection (2009), Tourism Development Strategy (2005), Spatial Development Strategy (2009) and Spatial Plan (2010) also advocate the exceptional role of mountain areas in the preservation of endemic species, pastures and meadows of great ecological value and environmental quality in general. In addition, analyses in a whole range of strategies (Regional Development Strategy (GRS, 2005a); National Strategy for Sustainable Development (GRS, 2005b); Rural Development Strategy (GRS, 2009a)), the Spatial Plan of the Republic of Serbia (RASP, 2010) and studies (e.g. Small Rural Households in Serbia and Rural Non-Farm Economy (Bogdanov, 2007)) address hilly and mountain areas as areas of specific geographic conditions and a higher extent of social, infrastructural and economic problems. In both studies, hilly and mountainous areas stand out as particular category, grounded on specifics such as significant natural resources.

The challenge for the natural resources of Serbian mountain areas is their uncontrolled use. Natural heritage, considered the common good, is usually assigned as a state property with no specified rules of use. Therefore, unregulated land ownership is usually an obstacle for private investments; it hinders or makes potential foreign capital completely unusable for concessions (Maksin et al., 2011). Even though mountain areas are sparsely populated, some locations of exploitation as well as areas of illegal building cause irreparable damage to the environment.

2.3 The Value of Anthropogenic Resources in European Mountain Areas

In addition to natural heritage, cultural patterns in mountain areas are also considered equally important (van Ginkel, 2004). The NORDREGIO study (EC, 2004) points out that mountain landscapes are the outcome of nature-people interactions established over centuries and J. Bryden, L. Van Depoele and S. Espinosa (2005) named them "sources of rural culture". According to R. Prodi (2002) and Millennium Ecosystem Assessment (United Nations Secretary, 2005) geographically induced fragmentation of mountain space is the reason for diverse ethno-cultures whereas different sources relate cultural diversity to mountain areas.

Due to their geographical isolation, mountain areas have remained reserves of natural resources, but are also refuges for traditional patterns of production and customs. If mountain populations moved to live and work in lowlands, not only mountain areas, but the entire

European community would suffer from the loss of those resources (Prodi, 2002). Serbian mountain areas are also marked as a source of socioeconomic heterogeneity (Tošić, Krunić, 2002) conditioned by specific climate and other geographical elements that have resulted also in specific types of building construction (Mitrović, 2002b). Being positioned on the edge of Europe, the Balkan Peninsula has always been a region of religious and cultural civilisation interwoven with Asia. This has not always been in a peaceful manner; therefore, medieval monasteries and sometimes entire settlements have found their refuge in hidden mountain gorges or barely accessible mountain ridges. This type of location still secures sporadic traces of the material historical and cultural heritage of Serbia (Maksin-Mićić, 2002).

The cultural diversity of Serbian mountain areas also concerns traditional economies that preserve pastures and meadows of great ecological value and significance to the mountain areas with regard to live-stocking and organic production, which are actually based on traditional patterns of production (Nikolić, 2003). The mountain areas of the European Union comprise about 20 % of arable land and 27 % of agricultural land (Maksin et al., 2011). The European Economic Community highlighted its mountain areas as one of the the specific agricultural areas in 1975; however, some European countries, particularly Austria and Switzerland, have put emphasis on rural development in their mountains due to the preservation of cultural and other anthropogenic (material) riches, civilisation and historical heritage (Nikolić, 2002). The main characteristics of Serbian mountain agriculture – its geographical conditions and non-commercial production – actually represent advantages with regard to the product (meat and milk) quality: live-stock is fed on pastures with no artificial additives (Nikolić, 2003). Specific geographical conditions are also the reason for the presence of mountain specific types of live-stock (e.g. goats that are particularly adaptable to mountains), which contributes to diversity of mountain products (Ibid.)

Potential based on the both natural and cultural resources of mountain areas makes them convenient for the development of tourism and recreation, for which they are a significant part of the mountain economy, particularly due to the landscape value, natural and geo heritage (Maksin et al., 2011). Therefore, more than 50 % of incomes in continental tourism are realised in mountain areas (Ibid.). Since “tourism is the fastest growing industry” (Mountain Agenda, 2000), cultural and natural diversity, scenic landscapes and a relaxing atmosphere categorise worldwide mountains as areas significantly suitable for tourism (Messerli, Ives, 1997; Mountain Agenda, 2000; van Ginkel, 2004; United Nations Secretary, 2005, Mountain Forum, 2008). Those advantages are also recognised by Serbia Tourism Development Strategy (Horwath Consulting Zagreb and the Faculty of Economics, 2005), the Spatial Plan of the Republic of Serbia (RASP, 2010) and some authors who have done research in this areas - S. Mitrović (2002a), S. Mitrović, S. Milijić, D. Dabić (2002), D. Dabić, M. Mitrović and S. Milijić (2002), etc.

An interest in the use of the natural and anthropogenic resources of Serbian mountain areas has been realised, starting in the 1970s with a spatial plan for the Kopaonik Mountain ski-resort (Dabić, Mitrović, Milijić, 2002). Recently, the Spatial Plan of the Republic of Serbia (2010) brought up the topic of (high) mountain areas, setting their future in the sphere of tourism development. Forests and streams are also economic advantages because they can be used for

hunting and fishing (Dabić, Mitrović, Milijić, 2002). The cold water of the mountain streams is convenient for particular species of fish (such as trout) that require fast, clean and fresh water (Gavrilović, Gavrilović, 2002). Apart from these, mountain air is attractive for the enhancement, endurance and overall performance for those who play sport; therefore, sport and recreational tourism represent additional anthropogenic resources of mountain areas.

Besides their multiple advantages, mountain areas are in focus since they are very much under threat. Current changes in climate, the economy and demography have to be addressed in order to preserve the rich natural and cultural heritage or at least take their impact in consideration. Primarily, in terms of geography it takes more effort to provide and keep one's livelihood in mountains (European Commission, 2002): the climate is more severe, the soil is less fertile, distances are further, for example to the market, less economical predispositions, services are less accessible and less profitable to supply. M. Lipton (1979) and S. Wiggins (2001) also nominate rural areas as being physically, politically and economically isolated from the areas of more economic and decision-making powers. Due to the predominately rural character of mountain areas, including those in Serbia, this partially explains their lagging behind urban and metropolitan areas with regard to their infrastructure and other investments (roads, telecommunication, social infrastructure, etc). Thus, mountain areas are simultaneously threatened by natural and cultural decline.

In addition, their potential is undermined by some factors related to population trends. Namely, the impact of demographic change is particularly noticeable in Serbian mountain areas and is reaching its most extreme phase – villages solely populated by the elderly as well as dying-out villages, whose settlements are gradually losing their traditions and identity, exactly what makes them valuable. Those trends were recognised at the international Conference on Mountain Area Development, held in Serbia in 2002, but also in the studies on mountain areas that followed afterwards – R. Malobabić and O. Bakić (2003), O. Dželebdžić and V. Jokić (2003), M. Nikolić (2003), Maksin et al. (2011), etc. The continuation of existing demographic trends will lead to the sequential decrease in the number of villages, finally leaving mountain resources unused. Circumstances like that form a bipolar system with a high concentration of population and activities in the capital of Belgrade on the one hand and an exodus of human resources in provincial areas on the other, as is the case with Serbian mountains areas. The bipolarity harms the balance in territorial development. So, the problem is that the territorial bipolarisation of Serbia is growing, thus reaching extreme forms of depopulation and economic devastation in mountain areas which are at the same time naturally the most preserved and fragile (RASP, 2010).

2.4 Mountain Areas between Conservation, Uncontrolled Use and Preservation

Serbian and other European mountain areas are reservoirs of essential natural and unique cultural heritage that are sometimes more and sometimes less used. Resources such as natural biodiversity, water and air quality are more secure if left to the processes independent of humans. On the other hand, traditional production, cultural patterns and biodiversity consisting of cultivated agricultural species can be preserved only with the presence of humans and their

intervention. Therefore, the collision between conservation, preservation with subtle use of resources and uncontrolled use of resources is one of the key issues for mountain areas.

2.4.1 Conservation

A strict protection regime, where only scientific and cultural-purpose use is allowed, has been established for some naturally valuable locations (e.g. the Engadin National Park in Switzerland and the Hohe Tauern National Park in Austria) (Maksin et al., 2011). Similarly, the Law on Natural Protection of the Republic of Serbia (2009) has established the status of different naturally protected areas where the strictest level of protection is appointed to the strict nature reserve. In such areas, the presence of man is acceptable only as a visitor and for scientific research; no settlements are included and no construction allowed. The other types of naturally protected areas in Serbian mountains allow more flexible use, although under certain conditions that are legally regulated.

An example of a potential obstacle to the use of naturally protected areas is the over-complicated and time-consuming procedures for ownership transfers and construction licences in Slovenia, which discourages potential investors (Lisec, Drobne, 2009). In Serbia, the problem appears because of potential or actual conflict between the development of tourism and the protection of natural heritage or other land-use and land functions in mountain areas (RASP, 2010; Maksin et al., 2011).

2.4.2 Uncontrolled use

However, the opposite situation appears to be an even larger problem: uncontrolled use as an “obstacle” for the preservation of natural heritage. “Tourism development holds great opportunities, but illustrates the contradictions between economic viability and ecological preservation in mountain areas” (EC, 2004, p. 211). In economically more developed mountain areas such as the Alps, tourism is a leading activity (Maksin et al., 2011); nevertheless it is clear that even outdoor-sport activities can be damaging to the natural resources (Lichtenberger, 1979; Garcia-Ruiz, Lasanta-Martinez, 1993): hunting-tourism has its negative impacts on overgrazing by deer⁶ (San Miguel, Perez-Carral, Roig, 1999) and mass tourism in ski-resorts is particularly destructive to natural ecosystems (Weiss et al., 1998). As CEMAT (2000) notices, tourism is viable where natural and anthropogenic resources are the most attractive, but also where they are the most vulnerable, which is particularly the case with coastal areas, islands and mountain ranges.

In the previously socialist countries of Eastern and South-Eastern Europe, some locations in mountain areas were intensively used for wood production, mining for coal and minerals and for hydropower, but there are also locations in the zone of the once Iron Curtain which are considered as the most preserved mountain ecosystems in Europe (EC, 2004). However, even more recently, the heritage of mountain areas in Serbia has become endangered by economic

⁶ The problem of sustainability in some parts of Spanish mountains has appeared since traditional agricultural activity has been replaced by deer hunting-tourism. Summer is the period of time when the lack of grass coincides with the increased need of female deer in lactation for food; therefore, shrubs and trees become the source of food, which influences the ecological balance (San Miguel, Perez-Carral, Roig, 1999).

activities and settlement infrastructure that jeopardize biodiversity, cause soil erosion and diminish forest capacities with deforestation in many cases. The spontaneous construction of roads and tourist facilities, summits occupied by civil and military relays, military bases surrounded with barb-wire, inaccessible for visitors, over-use of cars in protected areas and forest-fires are being caused by negligent visitors (Mitrović, 2002; Dželebdžić, Jokić, 2003; RASP, 2010).

In addition, sectoral plans or their sectoral realisation harms the natural and traditional anthropogenic heritage of mountain areas as well. As pointed out in the Spatial Plan of the Republic of Serbia (2010), Serbian mountain areas suffer from the insufficient use of new technologies in industrial production and inefficient emission filtration or the complete absence of filtration, in addition to which, tourist accommodation does not always have sufficient water supply and sewage infrastructure. A large share of households and apartments with no connection to the sewage system also affect environmental recipients such as soil and water, all of which affects the environmental quality.

2.4.3 Preservation

Discussions on perspectives to overcome extremes such as strict conservation and use without considering repercussions have been going on since the Earth Conference in Rio de Janeiro in 1992. Such discussions have been taking place both in general and specifically for mountain areas. The term sustainability has become a leading principle in a great number of political documents, conferences and studies, nationally and internationally.

Two major European documents – European Spatial Development Perspectives (1999) and Guiding Principles for Sustainable Development of the European Continent (2000), and one of the leading spatial planning documents in Serbia – the Spatial Plan (2010), have a very similar approach with regard to balancing between conservation and use. What they address is primarily sustainable development and socio-economic development together with conservation and protection. Thus they recommend “development and conservation⁷ of the natural and the cultural heritage through wise management” (ESDP, p. 20), “a thorough understanding of ecosystems and of the number of visitors a (tourist) area can support” (Guiding Principles, p. 12) and also that spatial development vision is “sustainable economic growth and competence ... preserved and protected natural and cultural heritage...” (Spatial Plan of the Republic of Serbia, p. 25).

Besides their general recommendations, the Guiding Principles (2000) and the Spatial Plan (2010) specifically refer to mountain areas. Taking care of the entire European continent, the Guiding Principles stresses that “spatial development policy should give special and suitable consideration to the preservation and development of mountain regions”, pointing out the necessity “to find the right balance between their economic and social development and the protection of the environment” (p. 14). Similarly, the Spatial Plan set a goal with regard to high

⁷ The ESDP and the Guiding Principles use terms “conservation” and “preservation” as synonyms.

mountain areas to protect and present them as an exceptional natural resource together with sustainable socio-economic development.

In addition to the three specific documents, sustainability oriented mountain development in Europe is also confirmed by the NORDREGIO study (2004). Their research embraced 29 European mountain countries, and one of its many tasks was a review on mountain policies, sectoral and holistic, explicit and implicit to mountain areas. Finally, they come up with the recommendation: “finding a balance between the objectives of development and preservation should be resolved according to the principles of sustainable development” (p. xii).

Mountain oriented international organisations such as Euromontana also speak in favour of the sustainable development of European mountain areas, with the preservation and promotion of “living mountains” set as their mission (Euromontana, 2012). The legally binding Alpine Convention again calls on “the prudent and sustained use of resources” and “the avoidance of under- and over-use” (Article 2). Further, the International Year of Mountains 2002, the Mountain 2002 conference in Brussels and Kopaonik (Serbia), the project for Sustainable Agriculture and Rural Development in Mountain Regions (SARD – M) (FAO, 2009), the compendiums of articles under the titles *Sustainable Development of Serbian Mountain Areas* (IAUS, 2003) and *Key Issues for Mountain Areas* (ed. Price, 2004) and the book *Sustainable Tourism Development in European Union and Serbia* (Maksin et al., 2011) are only some of the representatives for the sustainability idea and perspectives on sustainable mountain development in Europe.

2.4.4 New Development Perspectives for Serbian Mountain Areas

One of the main obstacles for sustainable development in Serbia is “extensive polarisation of developed urban areas and valleys with major population concentration on the one hand and undeveloped rural mountain and peripheral areas on the other” (Maksin et al., 2011, p. 264). For this reason mountain resources are only partially used (RASP, 2010) and Serbia is “lagging behind other European countries with regard to contemporary development guidelines and management for mountain areas, even behind countries in economic transition” (Maksin et al., 2011, p. 265).

Serbian mountain areas are actually “statistically invisible”; therefore, research about them has been conducted in limiting conditions (Mitrović, 2002; Dželebdžić, Jokić, 2003). However, the discussion presented in this chapter indicates, and S. Mitrović (2002) confirms, that there are confident reasons for bringing up “continual scientific and expert processes for reaffirmation of mountain areas” (p. 3) in Serbia.

Perspectives for the management enhancement of Serbian mountain areas that need to be looked for according to the Spatial Plan of the Republic of Serbia (RASP, 2010), potential improvement of legislation, which is addressed in the SARD-M study for the Balkan region (Mileva, 2008), holistic management approaches, as pointed out by van Ginkel (2004) and an integrated policy, development strategies and planning concepts, set as recommendations in ESDP (EC, 1999) and Guiding Principles (CEMAT, 2000) are the focus of this research.

2.5 The Problem Statement

In the juvenile phase of developing specific responses to its mountain areas, Serbia needs to strengthen its responses and specific measures regarding socio-economic development and the use of mountain resources.

Mountains store natural and cultural heritage, specific in comparison to other areas. In some cases the heritage remains unused, while in others it is being used unsustainably. The need to act and react to the circumstances in mountains and mountain areas was made explicit in Rio de Janeiro at the Earth Summit, 1992. The creation of efficient mountain area management was set as the goal. At the end of the decade, in 1999, the European Environmental Agency noted that efforts made in this field had not reached the expected level in European countries, with a comprehensive approach still missing and these areas still considered as marginal and tackled merely in sectoral policies. Similar omissions were noted at the Community Policies and Mountain Areas Conference (Brussels, 2002).

Further, the call for a sustainable approach to mountain areas and activation of political will continued after 2000. The outcome of the discussion at the *Alpine Experience - an Approach for other Mountain Regions?* Conference (held in Berchtesgaden, 2002) was an invitation for international cooperation between countries sharing the same mountain massif that should be based on previously defined national policy on mountain areas. At the *Global Change and Sustainable Development in Mountain Regions* workshop (Innsbruck, 2008) the idea of balanced development continued, particularly encouraging policy decisions grounded on scientific research. In the same year – 2008, the *Declaration on Brig* (outcome of the international conference *How to Generate Added Value from Europe's Mountains?*) raised the matter of mountain resources and their challenges once more, by calling for revision of existing policies and requested “a serious and more detailed treatment” (Declaration on Brig, p. 3).

The International Year of Mountains – 2002 also stimulated scientific publicity in Serbia. Hence the international conference *Mountain – 2002, Misuse of Resources, Absence of Development, Emigration*, which was also a public announcement of the IAUS's scientific two-year project *Sustainable Development of Serbian Mountain Areas*. Both the conference and the project's final publication summarized the advantages and analysed the situation in Serbian mountain areas, advocating revitalisation, renewal, sustainable use and attraction of population. The project was the first extended and explicitly focused analysis on Serbian mountain areas. Even though it embraced topics relevant for mountain areas - agriculture, tourism, settlement networks - and gave initial aims, detailed and comprehensive development measures were still lacking. Also, more detailed insight was given only for a few pilot areas that corresponded to spatial plans run at the time of the project.

S. Milijić's dissertation *Development Strategy for Mountain Areas of Serbia* (2005) followed the steps from the project in terms of their explicit focus on mountain areas. The accent of the dissertation was on sustainable development of tourism in the case of Stara Planina. Finally, Serbian mountain areas got a rather explicit role in a national planning document in 2010 – in the Spatial Plan of the Republic of Serbia. An improvement when compared to previously made

documents was to have Serbian mountain areas understood as areas of specific advantages and difficulties. However, the analysis and implications were limited only to high mountain areas ($\geq 1,500$ m) and to the main objective and basic postulates, but without in-depth measures.

Regarding the relevance of an explicit treatment of mountain areas by governments (Agenda 21, 1992; Mileva, 2008), policy makers and administrators, which is to be supported by scientific analytical material, there is necessity to consider “appropriate mechanisms, including regional legal and other instruments” (Agenda 21, 1995, Article 13.8.c.) and finally accordingly to previously listed arguments, this research aimed to answer the question:

RQ: What are the development perspectives for Serbian mountain areas?

Hypothesis: Outside of Serbia, in the European context, there are a greater number of responses to problems in mountain areas, developed and practised longer than in the case of Serbian mountain areas.

Even though each country and mountain massif should work on its own approach to development, examples of success and previously applied actions represent a valuable pool of information and might prove helpful in other contexts (Berchtesgaden Declaration on Mountain Range Regional Cooperation, 2002). Since the focus on Serbian mountain areas has intensified just recently and experiences in other European mountain countries, including international projects, seem to be more diverse and finally the exchange of practice is considered useful (Crauser, 2002), experiences from the whole range of European mountain countries are taken in account in order to consider the future development perspectives in Serbian mountain areas. This reflects in three research sub-questions that help to structure this research and give the final answer to the main research question:

RQ (1): How similar/different are the problems in Serbian and other European mountain areas?

Hypothesis (1): The problems in Serbian mountain areas are partially the same as in other European mountain areas, though in some aspects different. They are more similar in matters of environmental and demographic problems, while being more different with regard to their economic development, accessibility and infrastructure and in their management.

RQ (2): How do Serbia and other European mountain countries address problems in their mountain areas?

Hypothesis (2): European countries have more experience in addressing problems in their mountain areas than Serbia, which has just recently started and is still having problems to practically apply even the measures already declared.

RQ (3): How can the use and socio-economic development of Serbian mountain areas be enhanced?

So, the aim of this research is to describe and explore problems in Serbian mountain areas and reveal potential responses to those problems, relying on experiences from other European

mountain countries. Thus, it is expected that the currently humble and juvenile experience of Serbia in explicitly addressing its mountain areas will result in gaining insight for future research, planning and decision-making.

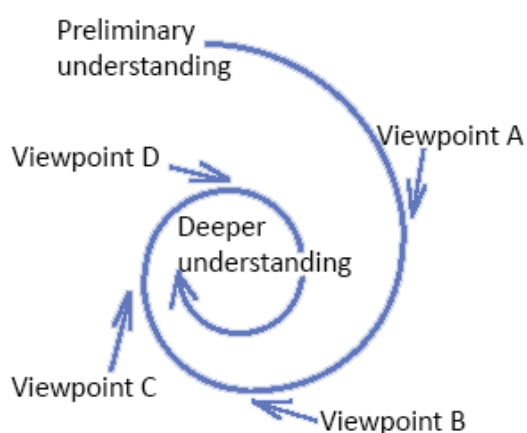
3 METHODOLOGY

This chapter covers several topics that aim to explain the chosen methods and how they are related to the form of the main research question and sub-questions. The first section is about chosen research design subsequently followed by sections about data collection and data analysis methods. Finally, the last section is a review of the limitations that were expected in the research process.

3.1 Research Design

In order to answer the question of what the development perspectives of Serbian mountain areas are, this research started from tracking the problems that are the obstacles for development in the overall European mountain context and then considering responses and measures some of those countries use to mitigate and/or solve those problems. So, in spite of the primary focus being on Serbian mountain areas, other European mountain areas are involved in the first phase of the research. According to one hypothesis that *European countries have more experience in addressing problems in their mountain areas, while Serbia has just recently started*, it was expected that the development perspectives of Serbian mountain areas can integrate some of the experiences from other areas and that the results of this research can benefit from the cross-country analysis.

Graph 3-1: Stages of Exploratory Research



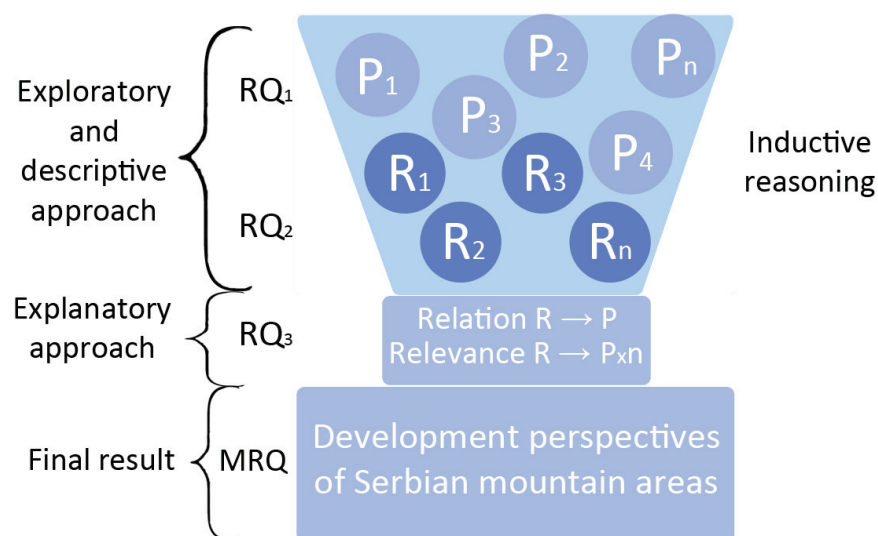
Source: Routio, 1995

The first research phase was aimed to answer the first and second research questions. The results, which are presented in the fourth and fifth chapters, actually represent the part of the research that was based on inductive reasoning in which both the descriptive and the exploratory approach were applied. Descriptive research was applied because its purpose is to describe phenomena and one of the aims of the first two research questions was to trace and describe problems, responses and measures and prepare material for the explanatory part of the dissertation. Also, the description contributed to systematically representing the data collected thus helping the reader to follow the processes towards the results. The other approach – the exploratory approach, was used in order to involve new sources of information

(by interviewing) and collect (by selecting cases and interviewing) new data about the topics considered: problems, responses and perspectives. Collecting the information was expected to secure validity in drawing final conclusions. Namely, exploratory research is a gradual process where knowledge on particular phenomena accumulates in various stages, each developing a deeper level of understanding in comparison to the previous stage (Routio, 1995) (Graph 3-1). The aim was to gradually gain precision in order to achieve reliable conclusions and accurate results. The gradual approach is considered appropriate when research addresses recently developed issues that are loosely explored and when data collection is challenging (Babbie, 1989). P. Shields and H. Tajalli (2006) point out that explorative character is also a property of applied research, which complies with this dissertation.

As Graph 3-2 shows, the first descriptive-exploratory stage of the research corresponded to the first two research questions. The next phase is summarised in chapter six that corresponds to the third research question and is a result of inductive reasoning. This phase of the research was to point out correlations between problems, measures and responses to them that are practised in European mountain areas. The difference between the first phase and this phase is that the reasoning focused particularly on Serbian mountain areas, answering the question of how their use and development can be enhanced. In order to stress the correlations between problems and responses and to point out categories of responses that are the most influential (influence the whole range of problems and problem categories) on the problem categories, this phase of the research is primarily explanatory. Since an indication of response enhancement is expected in this phase, the explanatory approach contributes to a probabilistic concept of relations and to the determination of which variable might be inducing a certain enhancement.

Graph 3-2: The Phases and the Elements of the Research Design



Source: elaborated by the author

As a final result, the final phase of the research presents development proposals for Serbian mountain areas from the previously gained results. As an addition to the previous results, this

part of the research points out potential aspects of action regarding the problems and development of Serbian mountain areas that were perceived as inevitable.

So, the chosen research design is a mixture of a cross-country study and case-study, based on inductive reasoning. The first phase of the research was carried out through the descriptive and exploratory approach, while the second phase was conducted as explanatory research. Although dominantly qualitative with regard to the method used, quantitative methods were applied in the research as well. The methods are shown in the following section.

3.2 Data Collection Methods

As previously pointed out, the dissertation is based on multiple source analysis in order to obtain a higher level of credibility, where data collection was based on the findings of multiple studies through narrative and statistical data analysis. In the case of other European mountain areas, data was found in the available literature (online and library sources), while in the case of Serbian mountain areas data were collected from both available sources and interviews conducted in several rounds. According to N.K. Denzin (1970) acquiring data from multiple sources is a form of evidence cross-checking, also known as the triangulation method. All in all, the dissertation complies with the characteristics of dominantly qualitative and partially quantitative research.

For the descriptive and exploratory part of the research, three methods were used: data analysis, interviews and analysis of selected cases. Data were collected from available literature sources and by interviews that were used in both the first and second research questions. Nevertheless, there is a difference between the methods those two questions were approached with. The difference is that the data analysis in the first research question included statistical analysis, while this was not the case with the second research question. The data were drawn from documents, journals and statistical publications, subsequently synthesised into categories and finally described as such (this is also known as “narrative description” by Patton, 1990) to be cross-nationally comparable.

Data on selected cases were obtained by interviews with the local population in mountain settlements. The individuals interviewed were asked to express their opinion on the necessary and urgent responses. Their answers were also expected to indicate their vision on the development perspectives for Serbian mountain areas, so they could be integrated in the results of the research. Conducting interviews with households and the local population required field work that was also used for collecting situational observations, later used as a source of information.

An additional aspect to consider is the time-frame for which the data were obtained. In the cross-country comparison based on available data it was difficult to obtain the same indicators for all the mountain countries that were valid for the same moment/span of time, which is particularly valuable in the analysis of statistical data. Therefore, most of the statistical indicators chosen comply with indicators in the NORDREGIO study because it was the most comprehensive in terms of indicators involved and countries embraced. This resulted in a vast

amount of analyses, maps and graphs referring to the year 2001 and 2002⁸. However, the dissertation includes data and information for the time period before and after 2001/2002.

3.2.1 Data Analysis from Available Literature

For this research, literature obtained on Serbian mountain areas was predominantly in hard-copy form because the online availability, especially of scientific articles and papers, was rather limited. In contrast to this, a considerable number of available sources for the other European mountain areas were obtained online. In the latter case, literature was significantly limited to that which was available in English. The types of documents that were considered and analysed are various: (scientific) journals and newspapers, conference materials (including declarations, agendas, conventions, etc.), statistical censuses and yearbooks, municipal web portals, legislative acts, studies, reports, strategic documents and spatial and master plans.

Among the great number of journals used as sources, the majority of articles were found in: Mountain Research and Development; Ambio; Rural History; and SPATIUM. Those journals were used as sources primarily for analysis of the first research question – the identification and distribution of problems in European mountain areas. In contrast to this, articles from daily newspapers (e.g. e-kapija, Blic, Danas) were useful as additional information sources on responses and proposals of responses.

Conference proceedings or other documents launched at international meetings were the other type of sources used here. Those sources were of great relevance for identifying responses to problems in European mountain areas, although having the role of literature reference for the first research question, too.

Further, the descriptive statistics method applied in the first research question required statistical sources for Serbia as well as for other European mountain countries. In the case of Serbia, analysis was based on the official census and annual publications issued by the Statistical Office of the Republic of Serbia. For other countries, the NORDREGIO study on European mountain areas provided a consistent set of statistical data which were used in this research. On some occasions online statistical resources were also used: EUROSTAT, Statistical Yearbook and Internet World Stats.

An online database of legislative acts in Serbia (National Assembly website) and studies on this topic for other European mountain countries were used to obtain data on responses to problems in mountain areas. Actually, some of the studies target solely legislation on mountains and/or mountain areas, while in the case of Serbia, analysis was carried out on legislative acts that were expected to be of relevance for mountain issues because there were no mountain specific acts.

Otherwise, the analysed documents included various studies, reports, spatial plans, master plans and strategic documents, organised and published by Serbian institutes on planning and

⁸ The last population census in Serbia was conducted in 2002. For a vast amount of indicators published only in census books (not in annual publications), the research was often limited to the year 2001 or earlier census books.

urbanism and by major European organisations such as the European Commission, FAO, European Academy Bozen/Bolzano and the Balkan Foundation for Sustainable Development.

3.2.2 Interviews with Experts, Local Authorities and Local Populations and a Selection of Cases

Because explicitly dealing with mountain areas in Serbia is a recent development, interviews were used in order to ensure a higher verification level regarding problems and responses and exploring aspects relevant for the conclusions within the third research question. In comparison to studies on mountains and mountain areas in other European countries (frequently including solely European Union countries), data in Serbia are often aggregated for the integral territory of the country and not explicitly focused. Moreover, traditionally eastern-European systems are centralised, practising decision-making independently of local governments and local communities. Therefore, this research also aimed to integrate local stakeholders, reflecting their point of view, motives, visions and desired responses.

The interviews were conducted in three stages – from national to local level – with three main functions: (1) as a source of information about problems in Serbian mountain areas, (2) as a source of information about responses and perception of the responses and (3) for detection of the visions and opinions of the local authorities and the local population on the development perspectives for Serbian mountain areas. In order to reduce completely randomised sampling and contribute to data collection for analysis, interview data collection was designed to correspond to a multi-stage process as defined by J. Ritchie, J. Lewis and G. Elam (2003).

Interviews were semi-structured with open-ended questions, although in some cases formulation led to simple answers such as confirmation or negation. A design with open ended questions was chosen in order to match the overall research design – description and exploration and semi-structured interviews were chosen to secure the balance between information expected and inflow of unexpectedly relevant information. Nevertheless, three stages of interviews were conducted in the form of conversation, which opened the possibility of asking additional questions if clarification and explanation were needed. The option of additional questions was also available when an unexpectedly relevant topic emerged from the conversation. However, this was excluded in the case of supplementary interviews conducted through E-Mail exchange: they were structured, open-ended question interviews, distributed to each targeted participant in equal form. The interviews that were conducted face to face were recorded in order that no relevant information was missed for analysis and to ease the use of the large data-base acquired in more than thirty interviews. Information gained via E-mail exchange did not require recording.

Each interviewee at the national and municipal level was informed in advance via E-Mail about the topics they would be interviewed about in order to achieve a better understanding of what was expected from them and, if possible, for giving them a chance to prepare additional literature that the interviewer could take away. The interviewees were also informed about the dissertation topic, and the aims and expectations related to the interview. Before an interview began, a consent signature was obtained from each interviewee. However, there was no prior

contact established in the third round – interviews with the households (local population) - because sampling was conducted by the convenience method.

3.2.2.1 First Round – National Level

The first round of interviews was conducted at the national level with institutions and experts in Belgrade, June 2009. Because there were no institutions explicitly dealing with Serbian mountain areas, exploration had to start from rather unspecific interviewees. The interviews were conducted with a focus on the following topics: (1) how explicitly mountains and mountain areas were addressed in the work of a particular institution or organisation and which responses were made (2) what changes in development (natural resources, demographic trends, economic activities, land use) were noted and (3) which municipality was an appropriate example for the following round of interviews and why.

A preliminary literature review showed that some topics related to mountains and mountain areas more often than the other topics: agriculture, rural development, population structures and distribution. Based on this, the ministries responsible for these topics were chosen as interviewees for the first round:

- The Deputy Leader in the Prime Minister's Team for the Implementation of Poverty Reduction Strategy and Focal Point for Social Policy and Vulnerable Groups; and the Coordinator for Economic Development and Employment, also Part of the Team for Implementation of the Poverty Reduction Strategy;
- The Consultant for Rural Development, Sector for Rural Development, Ministry of Agriculture, Forestry and Water Management;
- The Coordinator for National Monitoring and Evaluation of Social and Health Services for the Elderly; and the Team Manager of the Research and Development Department - Republic Institute for Social Protection;
- The Junior Advisor in the Sector for Regional Development, and the Advisor for Drafting the Development Criteria and Assessing the Level of Development, Department for Analysis and Regional Development Policy - the Ministry for the Economy and Regional Development of the Republic of Serbia;
- The Director of the Republic Agency for Spatial Planning of the Republic of Serbia.

A spatial planner, rural policy researcher and an NGO representative were chosen as expert interviewees. By the snow-ball technique (Patton, 2001), the Prime Minister's Team for Implementation of Poverty Reduction Strategy recommended additional contact with the Amity NGO that had cooperation with the local and elderly population.

- President of the Steering Committee – Amity NGO;
- The Senior Scientific Associate, Assistant Director at the Institute of Architecture and Urban & Spatial Planning of Serbia, PhD in Spatial Planning, research interests: sustainable mountain development, sustainable tourism;

- An expert on rural development and rural policy, Professor at the Faculty of Agriculture – Belgrade University, Chair of Agricultural Economics and the Market, research interests: agrarian policy and support, agriculture in the international integration process, structural changes in agriculture, rural development policy, rural economics and the labour market, rural poverty and social inclusion⁹.

3.2.2.2 Second Round – Municipal Level

Relying on the snowball or chain sampling technique as considered by D.D. Heckathorn (2002), interviews with well informed experts who have a great deal of information about a certain phenomenon were also used to identify critical cases and recommend participants for the next round of interviews. In the multi-stage design, this sampling method had a role in choosing the second round of interviewees based on expert opinions from the first round. This technique is common for identifying a small number of key cases. Additionally, another aim was to make a selection covering as many Serbian mountain massifs as possible and to choose municipalities which are covered by a spatial plan of areas for special use because those documents were the most explicit tools addressing Serbian mountain areas.

So, regarding the experts' and national authorities' recommendations, out of 78 municipalities in Serbian mountain areas, four were chosen for the second stage of interviews. All together five interviews were agreed with representatives for local governments and planning institutions. These were interviews with:

- Head of the Department for Urbanism, Communal Services and Inspection – Knjaževac Municipality (Knjaževac, July 2009);
- Leading Spatial Planner in the Department for Building Užice, Department for Spatial and Urban Planning and Project Manager for Spatial Plan of Užice Municipality (Užice, July 2009);
- Head of Department for Economics and Finances – Kuršumlija Municipality (Kuršumlija, July 2009);
- Expert Associate for Urbanism and Design and Planning Documentation, Directorate for Building, Urbanism, Planning, Design and Housing Issues - Kuršumlija (Kuršumlija, July 2009);
- Head of the Municipal Authority and Secretary in the Local Assembly of Crna Trava Municipality (Crna Trava, July 2009).

The structure in terms of the main topics was preserved for the second stage of interviews. Moreover, questions were formulated to correspond to the local (municipal) context, additionally focusing on the rural context in order to obtain data for the most fragile parts of Serbian mountain areas.

⁹ The interview with this participant represents the expert and professional opinion of the interviewee personally and not official policy or attitudes of the Faculty of Agriculture.

3.2.2.3 Third Round – Households in Villages

The choice of interviewees was made combining critical case sampling and the convenience sampling method. In the case of the first sampling method, the selection process, a small number of important cases actually had a high impact on the development of knowledge (Patton, 2001) – for this research, the chosen cases were those estimated as perspective cases by the interviewees at the national level. The other part of the sample was selected as convenience samples. The method, also known as accidental sampling, represents non-probability sampling which involves the sample being drawn from those close to hand (Patton, 2001). In the range of settlements similar in their problems and circumstances, it was considered that choice of particular interviewee does not make a significant difference from any other interviewee; therefore, the selection of participants was based on the inhabitants first available and willing to cooperate, thus also reducing costs and saving time.

Based on the recommendations of interviewees at a local level, preferably embracing villages above 600 m altitude (because that is how mountains are defined in this dissertation), a preliminary list of villages was formed. Finally, interviews with households (local population) were conducted in four case municipalities: six interviews in five villages in the City of Užice, four interviews in four villages in the Kuršumlija municipality, four interviews in four villages in the Crna Trava municipality and five interviews in five villages in the Knjaževac municipality.

The third stage of face to face interviews was conducted at the local level – with households in Serbian mountain villages. Similar to previous rounds, the interviews were also based on three groups of questions: (1) about trends and the current demographic, economic and infrastructural situation in the village and how the members of a household in the village react/adapt to the situation (2) about recognition of responses and the role of national and local government with regard to the situation in their household and mountain villages in general, whether the mountain inhabitants were familiar with governmental measures, whether they were users and what had changed in their behaviour with regard to the measures and responses and (3) about the vision of the inhabitants – what their plans, expectations, hopes and primary needs were and how they imagined young generations to be motivated to live in mountain areas.

3.2.2.4 Additional Round of Interviews and Collection of Information

After the planned rounds of interviews, space was left for the possibility that additional information might be needed. This proved to be true and resulted in a number of interviews conducted via E-mails, so that time was saved for data analysis.

One of the additional rounds of interviews was conducted via E-mail exchange with centres for social work in the same municipalities where the household interviews took place. The urge to make additional contact with these institutions occurred in the interviews with local authorities where interviewees indicated that centres for social work have more direct contact, action and interaction with the local population, while the authorities prevalingly care about planning. Again, there were three topics targeted in the structure of the interviews: (1) responses and measures provided by the centre, (2) relations between the institution on one hand and the

other public institutions and population in remote settlements on the other hand and (3) whether the local population had access to the information.

Among the four municipalities where interviews were conducted, only three of them (Užice, Knjaževac and Kuršumlja) had institutions for social work and each institution was contacted for their feedback:

- Coordinator for the Team for the Protection of Adults and the Elderly in the Centre for Social Work – Užice, also Leader of the “Pomozimo starima na selu” (Let’s Support the Elderly in Villages) Project (November 2009);
- Director of the Centre for Social Work - Kuršumlja (November 2009);
- Sociologist in the Centre for Social Work - Knjaževac (November 2009).

During the research, some information was collected via telephone and E-mail contact with particular institutions. Among those participants were also some of the institutions where interviews were conducted which were re-contacted, such as the Ministry for the Economy and Regional Development, the Republic Institute for Social Protection, the Institute of Architecture and Urban & Spatial Planning of Serbia, the Ministry for Agriculture, Forestry and Water Management etc. Additional cooperation was established with the Statistical Office of the Republic of Serbia, Public Company - Serbian Railways, the Faculty of Geography – University of Belgrade and the Serbian Business Registers Agency, the Faculty of Forestry – University of Belgrade, the Department for Urbanism in the Paraćin Municipality and the Department for Communal Services, Energy and Traffic in the City of Niš.

3.3 Data Analysis Methods

In order to organize and conceptualise the data obtained for both phases, the phenomena researched – the problems and responses to the problems – were categorized. Categorisation is a relevant point in data analysis (Day, 1993), thus “enabling to reduce the complexity of the environment, identify entities of the worlds and allow ordering and relating categories” (Dye, Schatz, Rosenberg, Coleman, 2000, <http://www.nova.edu/ssss/QR/QR3-4/dye.html>).

The set of problems in European mountain areas was categorized and those groups cross-nationally compared. In light of the explanatory approach, relations between those categories were searched for, also indentifying whether they are mutual or have a one-way relation and whether the correlation is positive or negative. The categories were also used to structure chapter five.

However, it was not expected for statistical data to be accessible for each phenomenon or that all phenomena are quantitatively measurable. Therefore, analysis on the phenomena included both groups of data where they were available, otherwise relying solely on more common verbal data. In order to increase validity and comparability, all available types of data that were accessible for various countries were taken into account. When pursuing the most consistent set of data (so they can be comparable between a greater numbers of countries), the NORDREGIO study (European Commission, 2004) was taken as a starting point because their set of indicators is rather comprehensive. The indicators and phenomena adopted from this study

were enriched with data from a whole range of other documents, scientific articles, statistics, and in the case of Serbian mountain areas, interviews with experts and the local population. The intention was to represent all available indicators for Serbian mountain areas alongside the other European mountain areas, although in some cases it was not possible to compare the indicators representing exactly the same year or time-span. However, some indicators for Serbian mountain areas were included even though they were not available for the other European mountain areas. This choice was made because it could improve the understanding of problems in Serbian mountain areas with regard to a particular topic.

Similarities and differences between Serbian and other European mountain areas were traced by a qualitative and quantitative comparison. Besides description by words, the quantitative data is presented in the form of maps and graphs as well, which eases the reader's interpretation of the cross-country analysis. The methodology and choice of indicators to compare countries, particularly in the comparison of maps (statistical data), was partially adopted from the NORDREGIO study on mountain areas (Mountain areas of Europe – Final Report, 2004). The reason for adopting the methodology is the inclusion of a great number of countries, consistent presentation of a great number of indicators in each encountered country and visually presenting indicators on maps, which was a significant source of comparable data. Further, the NORDREGIO methodology involves delimitation and comparison of mountain massifs that is also adopted as a comparable unit and is widened by the inclusion of Serbian mountain massifs.

Similarly, responses to the problems were categorized according to the categories of problems they address. Again the categories were used as a base for comparison of Serbian and other European mountain countries and for structuring this part of the research. In other words, similarities and differences between the same categories in different national contexts were searched for. Finally, according to the relationships between groups of problems, problems which are predominantly addressed by responses and differences between organisations in Serbia and the organisations of other European countries indicated the gaps to be overcome in Serbia. The relationships also revealed the role of the responses, upon which the future development perspectives in Serbian mountain areas were based.

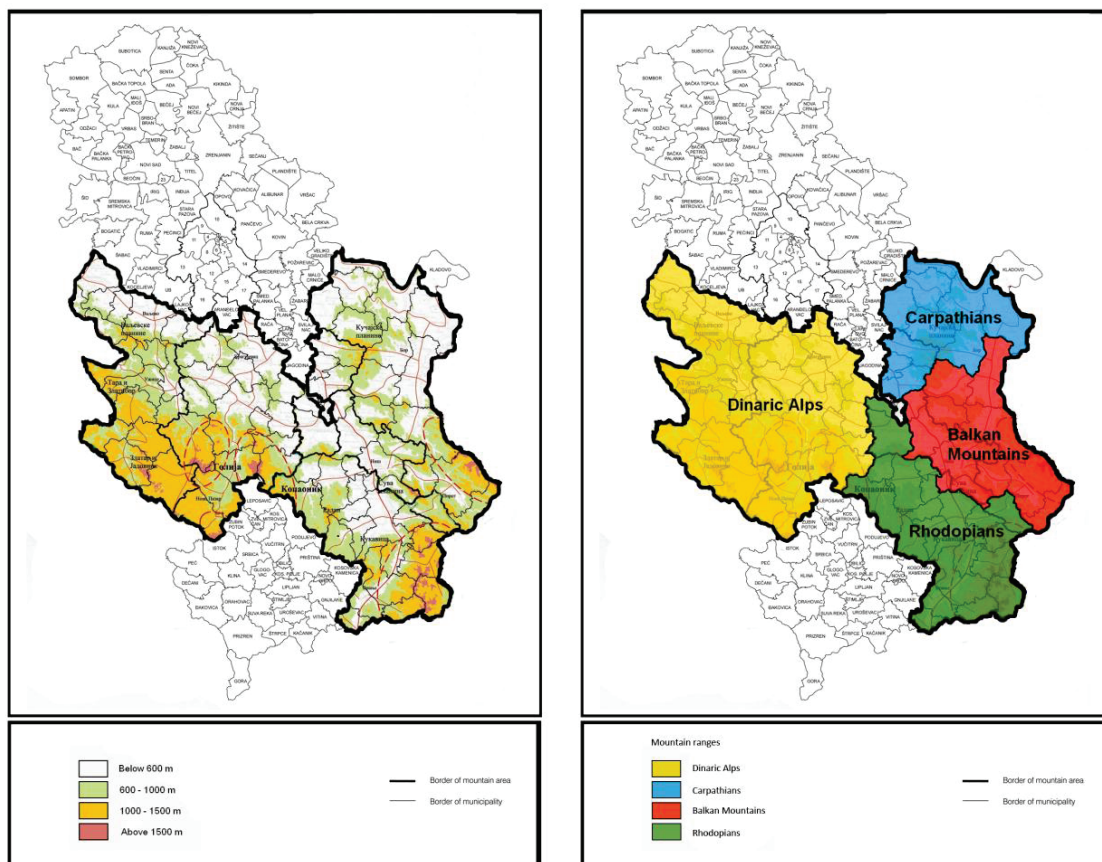
3.4 Definition of Study Area

The subject of the research is mountain areas in Central Serbia. As Fruška Gora and Vršачke Planine mountains are territorially displaced from the rest of the Serbian mountain areas (Map 3-1a) and their elevation only slightly exceeds 600 m altitude, they have been excluded from the mountain area delineation in similar projects, as they have been for this research. The other territory left out from the research subject is Kosovo and Metohija (or Kosovo). Since 1999, Kosovo, as part of the Republic of Serbia, was placed under the international protectorate (UN Resolution 1244), declaring itself an independent state in 2007. Its independence has been supported by 105 states (17.11.2013¹⁰) so far, but with 87 other states and the Serbian

¹⁰ <http://www.kosovothankyou.com/>

Constitution opposing it.¹¹ In order to avoid unresolved issues and due to the lack of updated statistical and other sources of data, the mountain areas of Kosovo were omitted. This means that Kosovo is left out from all the data and results presented in this dissertation.

Map 3-1a and 3-1b: Mountains and Mountain Ranges of Serbia



Source: elaborated by the author, based on a map in the Spatial Plan of the Republic of Serbia (2010)

As a result, 600 m is taken as the only criterion to define mountains for this project. The advantage is that it is possible to use the data base created for the purpose of the study *Sustainable Development of Mountain Areas in Serbia*, which would not be available otherwise. In the dissertation, the mountain areas of Serbia comprise 78 municipalities, where each has at least one cadastral municipality covering mountains. According to those definitions, the mountains of Serbia occupy 20,500 km² and mountain areas 45,131 km² (Table 3-1). Thus the proportion between them is about 1:2 or, in other words, the territory covered by mountain areas is twice as large as the territory covered by mountains. As the research requires a large data base and the data is collected at the level of administrative units, it was inevitable to conduct research not on Serbian mountains, but in Serbian mountain areas.

¹¹ In order to be recognised as a UN Member State, a state must be recommended for admission by 9 out of 15 members of the Council; all of the permanent states (China, France, Russia, United Kingdom and the United States of America) must vote for it (http://www.un.org/wcm/content/site/visitors/lang/en/new_memberstate/). This is not the case with Kosovo. Besides, after a recommendation for admission, a state needs to be recognised by two thirds of UN member states (Ibid.), which is also not the case with Kosovo.

Table 3-1: SMA - Mountains and Mountain Areas, Comparison of Basic Data

	Serbia*		Mountain Areas		Mountains	
	Number	%	Number	%	Number	%
Areas (km ²)	77,474	100	45,131	58.2	20,500	26.5
Population	7,498,001	100	3,099,014	41.3	721,453	9.6
Population Density	97	-	68	-	32	-

Source: the Statistical Office of the Republic of Serbia (2002) and Malobabić, Bakić (2003)

*Without Kosovo (as it is defined by UN Resolution 1244)

For the sake of the analysis, the study area – the Serbian mountain area – was divided into four mountain areas, each covering one of the international mountain ranges (massifs): Dinaric Alps, Carpathians, Balkan Mountain Massif and Rhodopians (Map 3-1b). The division was made because of the comparison of Serbian mountain areas to other European mountain areas, or in other words, for adjusting to the methodology of the NORDREGIO study from which a great amount of data have been considered in this research.

3.5 Limitations

The limitations for making a precise comparison of European mountain areas are the following:

- Measurement of one phenomenon (e.g. accessibility to services, air pollution) does not guarantee that the same phenomenon is measured by other countries or that the data are available for each country;
- The same phenomena are measured by different indicators (e.g. poverty can be measured as absolute, relative or subjective);
- Phenomena are measured by different units (in one case at a national, regional and local level, in other cases only at a national or national and regional level, or simply a municipality in one country can be significantly different in size than in another);
- Phenomena are measured in units of the same kind, but are significantly different size (e.g. in Austria the average size is 35 km², in Serbia it is 450 km²).

The other limiting aspect is data referring to different years. Namely, for financial reasons the last population census in Serbia was held in the year 2002 instead of 2001. In addition, analysis for Serbia, with regard to the vast number of indicators, was limited to the year 2001 or earlier census books because the Statistical Office of Serbia does not have annual publications.

When using annual statistics data was not available for settlements (only for the national, autonomous region and municipal level) and not all annual books used the same indicators consistently, but some of them are changed from one year to another. This was an obstacle when trying to follow the trend in a certain phenomenon.

The language issue is also a limitation in cross-national comparison. Data of any form (statistics, reports, studies, etc.) if collected for the purpose of use within a country are commonly presented in the language spoken in that country. Therefore, this research is prevalingly limited to data in English and Serbian.

Finally, mountain areas and mountains are differently defined throughout the studies and reports; therefore, comparison of data given in the study cannot be taken as absolutely exact. European countries even tend to use different definitions, depending on the purpose of a study and its main goal. Also, there are studies and documents where an exact definition of the terms “mountain” and “mountain area” is not necessary, which was another limitation in achieving absolute precision in comparison.

4 PROBLEMS AND CHALLENGES IN SERBIAN MOUNTAIN AREAS

This chapter is an attempt to answer how similar/different the problems in Serbian mountain areas are when compared to other European mountain areas. The development perspectives for Serbian mountain areas are expected to depend on how their problems are going to be addressed; therefore, categories of problems and their specific aspects presented in this chapter will provide a platform for considering the responses and measures dealing with those problems in the following chapter.

The problems in Serbian mountain areas are expected to be partially the same as in other European mountain areas, though in some aspects different. They are more similar in matters of environmental and demographic problems, while being more different with regard to their economic development, accessibility, infrastructure and management. To show whether this is true or false, a multi-source literature review and analysis on available statistical data is applied. Both qualitative and quantitative data are used, including studies, reports, scientific journals, and the internal institute's data-base, statistics books, legislative acts, conference compendiums, strategies, spatial plans, interviews with experts, the national and local government and the local population and finally observations from field work. The data obtained by interviews and observation only refer to Serbian mountain areas, while the data for other European mountain countries were limited to online sources and library literature.

The chapter consists of six sections, the first five sections discussing different categories of problems each: the use of nature and environmental problems; demographic trends and their impacts; difficulties in economic development; problems and challenges of accessibility and infrastructure; and management of mountain areas. Each of these problem categories is subdivided into aspects, which are also indicated throughout the chapter. Finally, the sixth section is a summary.

4.1 The Use of Nature and Environmental Problems

This section gives an overview on the problems and challenges with regard to nature and the environment in Serbian mountain areas parallel to circumstances in other European mountain areas. The first three topics consider the problem of pollution and the degradation of abiotic elements - air, soil and water; the last two topics refer to degradation of biodiversity and negligence of landscape values.

4.1.1 Air Pollution – Repercussion of Outdated Industrial Technology

Air quality in European mountain areas is being influenced by pollutants produced outside of the areas themselves, as well as by pollutants emitted directly from within their boundaries. Winds and higher precipitation in mountains have made them the predominant disposers of pollutants, even though industry and coal power-plants outside of mountain areas were the main source of pollutants' emission (Lovett, 1984; Erisman, de Vries, 2000). In the second half of the 20th century, pollution greatly increased, in particular gases such as sulphur oxide and nitrogen oxide (Bouwman, Van Vuuren, Derwent and Posch, 2002; Galloway et al., 2004). At the beginning of the 21st century, European mountain areas were positioned in front of other

mountain areas with respect to carbon dioxide emission; as well as being in second place with regard to emission of sulphur dioxide (Iyngararasan et al., 2004). By intensification of the emission of gases, particularly CO₂, humankind has caused the effect of green-house and global changes in the climate regime. European mountain areas are ranked second among the continents in emission of CO₂, right after the North America (Ibid.).

The problem of external air pollution appears to be present in both the industrially developed countries of Western Europe (Bouwman, Van Vuuren, Derwent and Posch, 2002) and in Eastern European countries that have recently gone through economic transition (Saniga, 2000; Sramek et al., 2008). Thus, some cities in Serbian mountain areas are exposed to pollutants from regional industries. The Copper Mining and Smelting Complex in Bor is the biggest SO₂ air polluter within Serbian mountain areas (located in the Carpathians) (Agency for Environmental Protection [AEP], 2009; RASP, 2010). According to the Republic of Serbia Environmental Report (AEP, 2011), other points of pollution are Užice, Ivanjica, Valjevo and Loznica (located in the Dinaric Alps), which significantly exceed the accepted value of soot emissions; also, Čačak and Kraljevo (located in the Dinaric Alps) exceed the accepted number of days with the permitted NO₂ emission. Finally, the Spatial Plan of the Republic of Serbia (RASP, 2010) notes that cement production in Kosjerić (located in the Dinaric Alps) and the chemical industry in Kruševac (located in the Rhodopians) affect the air quality in their surroundings, too (RASP, 2010).

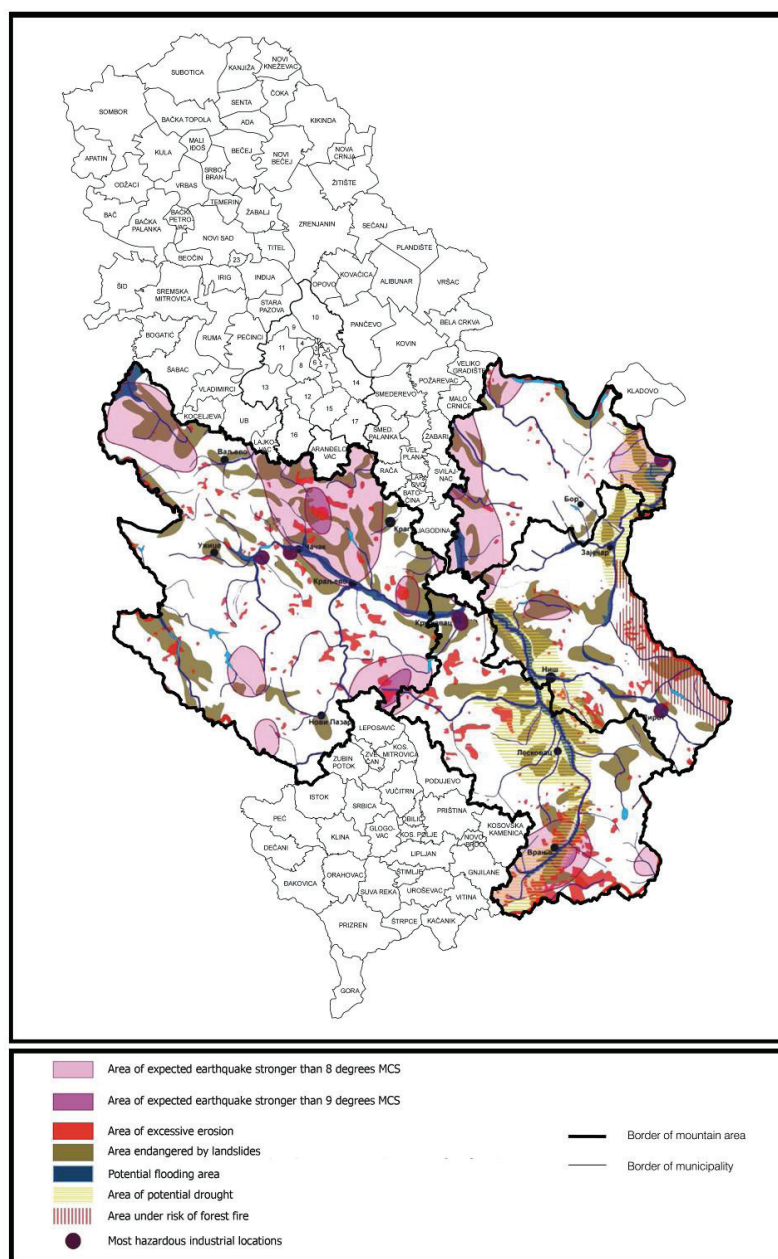
However, the Alpine mountain area stands out regarding internally emitted pollution. Namely, Alpine countries have dense transport infrastructure by being geographically positioned in central Europe, therefore, dealing with air pollution induced by very heavy traffic flow, particularly by freight traffic (Keller, Heimgartner, 2001; EC, 2004). For example, 30 % of the overall traffic in the Austrian Alps was freight traffic in 1998. In the future, it is expected that freight traffic will increase in both the Alps and Pyrenees, from 2005 to 2015 even by 70 % (EC, 2004). A specific problem with regard to freight traffic exists in Switzerland: the starting and finishing destinations of trucks routes are outside Switzerland, but a significant part of the routes run through it (EC, 2004). Except transitional traffic, e.g. from France to Germany, Switzerland's roads are often used for commuting when the start and end points are outside Switzerland's territory (e.g. from Italy to Italy or from France to France) (EC, 2004). In contrast to this, pollutants from burned motor fuels in Serbian mountain areas basically affect only bigger cities such as Niš (the Balkan Mountains) and Užice (the Dinaric Alps) (RASP, 2010).

So, all European mountain areas are exposed to the problem of air pollution produced in other areas, while Alpine countries are particularly influenced by car and truck emissions of pollutants. However, the challenge of how to improve the accessibility of mountain areas without excessive influence on the air quality remains an issue for Serbian mountain areas.

4.1.2 Soil Degradation – Geographical Preconditions and Man-Made Results

Because of their natural predispositions – higher precipitation and steep slopes – Serbian mountain areas are particularly endangered by soil erosion and other sorts of soil degradation (Map 4-1). Forms of degradation can be induced by natural processes, but more often they are consequences of human activity.

Map 4-1: SMA – Erosion¹² and the Other Natural Hazards (2008)



Source: based on RASP, 2009

Landslides, rock-falls, mudslides and avalanches are common for all mountain areas under natural circumstances (EEA, 1999; Schneiderbauer, Zebisch and Steurer, 2007), but additional human activities such as agriculture and tourism, accompanied with infrastructure-building, construction-building, etc., are causes for additional changes in soil, mostly with negative impacts. A study on the Spanish Pyrenees showed that an increased number of landslides coincided with an increase in human activity in the past (Remondo, Soto, Gonzalez-Diez, Teran, Cendrero, 2004); and soil erosion was more excessive in times-periods when pressure on

¹² Excessive erosion presented on the map refers to ground that loses more than 3 m/year or more than 3,000 m³/km.

agricultural land was more intensive, when production on steep slopes inevitably caused erosion (Lasanta, Begueria, Garcia-Ruiz, 2006; Mihai, Savulescu, Sandric, 2007; Kral, 2009). Even outdoor activities in barely accessible gorges, cliffs (Lichtenberger, 1979; Garcia-Ruiz, Lasanta-Martinez, 1993) and hiking trails (Kral, 2009) have an impact on erosion. An article by R. Ristić et al. (2009) shows the problem and the consequences of superficial actions in the development of ski-resorts in Serbia: with excessive loss of tree vegetation, eroded scars in the soil reached the depth in size of a man in only a couple of years. Logging and clear-cutting, conducted to enable the operation of ski-centres, therefore, induce significant consequences. According to the definition of ski centres in the Law on Ski Resorts (Government of the Republic of Serbia [GRS], 2006), there are four of their kind in Serbian mountain areas: Kopaonik, Zlatibor, Divčibare – in the Dinaric Alps; and Stara Planina – in the Balkan Mountains. The fact they were built with no conceptual guidelines on preventing erosion (Ristić et al., 2009) increases the probability of uncontrolled soil degradation. An additional problem in Serbia is that naturally protected areas are exposed to clear-cutting even though official documents claim ecosystem and biodiversity preservation as one of their main goals (Ibid.).

Partly natural and partly induced by human activities, climate change is one of the causes of soil degradation. Landslides, floods, storms and water-erosion are the consequence of climate change in Serbia, where an extreme precipitation regime switches periods of droughts by periods of excessive rain (RASP, 2010). Its impact is also recognized in the Scandinavian Mountains, the highest Carpathians and the Alps that face melting glaciers and permafrost soils, followed by landslides and floods (EC, 2004; Gurung, et al., 2009).

Nevertheless, soil quality can also benefit from the impacts of human actions. Even though a vast number of authors consider that land abandonment contributes to soil reconciliation (Cernusca, et al., 1996; Tasser, Mader, Tappeiner, 2003; Lasanta, Begueria and Garcia-Ruiz, 2006; Mihai, Savulescu, Sandric, 2007), other authors (Gonzales Bernaldez, 1992; Garcia-Ruiz, et al., 1996) argue that abandoned soils are even more endangered by the process of soil degradation. Both sides are right, but depending on the features of an area: its soil quality, types of spontaneous vegetation to be developed after abandonment (without any management) and climate characteristics. So, the case of some Mediterranean and Carpathian mountain areas, where extreme erosion during the big population pressure in the 19th century was “cured” with land abandonment and spontaneous vegetation recovery (Mihai, Savulescu, Sandric, 2007), supports the argumentation of the first group. In contrast, the example of shallow and nutritionally poor soils on steeper slopes, e.g. soils with vegetation of olives and vineyards in Spain, show that soil performance is better off when managed by human actions. This is because the system of terraces reduces erosion (Pardini, Gispert, Dunjo, 2004).

Similarly, interviews with two experts on soil and erosion management in Serbia have shown that Serbian mountain areas benefit from both land-abandonment and from controlled human interventions. Namely, since 1983, when the latest erosion-map for Serbia was developed, 30-

50 % of eroded areas have improved¹³. This betterment has happened due to the emigration of the population followed by abandonment of agricultural land (Stojkov, Pantić, 2008), but also due to anti-erosion measures conducted particularly alongside infrastructural axes¹⁴.

So, the geographic conditions of mountain areas make them all similar with regard to the problem of soil degradation. The unique exception is parts of the Scandinavian Mountain Range including territories of low altitude and insignificant slopes. Moreover, human activity exists in all mountain areas, so their impact is also commonly present all over them, sometimes as positive and on other occasions as negative examples. The specific character and extent of their impact are mainly dependent on the actual local conditions and the soil features themselves. However, no human intervention in Serbian mountain areas should be conducted without previously checking its impact.

4.1.3 Water Pollution – a Victim of Superficial Monitoring Practice

The quality of water resources in Serbian mountain areas is jeopardized for various reasons: firstly, incomplete monitoring of data and significantly low responses in surveys; secondly, the sewage endowment of households and data partially collected indicate highly unsatisfactory results with regard to the direct emission of waste and industrial water into the soil or rivers; and thirdly, even if data were successfully collected, there are no norms about the maximum permitted emission due to the undefined limits, even though the Law on the Environment was adopted in 2004 (AEP, 2009). Also, it is recorded that water resources drain off due to inappropriate forestation and activities such as mining (Mitrović, 2002a) while an interview with the secretary of a municipal assembly – Crna Trava Municipality – indicated a notable reduction of groundwater capacities due to the forested pine trees which are not allochthonous in this area.

As some parts of mountains are being extensively used and others neglected and isolated, water quality can greatly vary depending on the location. For this reason, there are high mountain springs and streams with clear water, but there are also highly polluted rivers in Serbian mountain areas such as the Toplica River (Rhodopians), the Crni Timok River (Balkan Mountains) and the Borska River (Carpathians) (RAPS, 2010).

The UNESCO Courier in 1987 (Loffler, 1987) reported that Alpine glacier lakes were polluted from not only human activity in production, but also tourism and housing as well as acid rain. Also, T. Dirnböck and M. Mirtl (2009) stated that pollutants in the Limestone Alps in Austria are being transmitted from the soil into the water. Nevertheless, the Water Management Office of Weilheim in Bavaria testifies that introduction of multi-parameter water quality measurement gave positive results with regard to water quality improvement (Lenhart, 2011). Therefore,

¹³ Information from an interview conducted with the Manager of the Institute for the Environment and GIS and head of the Chair for Physical Geography – Faculty of Geography, University of Belgrade (conducted in February 2010).

¹⁴ Information taken from an interview conducted with the dean for scientific research – Faculty of Forestry, University of Belgrade, Serbia. Fields of expertise: torrent flows and erosion; hydrology of torrent flows; spatial ordering of eroded areas; and environmental protection (conducted in April 2010).

some Alpine cities such as Innsbruck and Vienna use spring water as their water supply without previous treatment against pollutants (Schwaiger, 2007).

A common issue for European mountain areas is the existence of locations exposed to pollution. Nevertheless, practice that differentiates Serbian mountain areas from Alpine is consistent involvement of a monitoring system and its denser monitoring network which is far better developed in the Alps.

4.1.4 Biodiversity Degradation – Call for Prompt Action for Controlled and Responsible Management

Climate warming, human interferences and insufficient management of natural resources negatively influence mountain biodiversity.

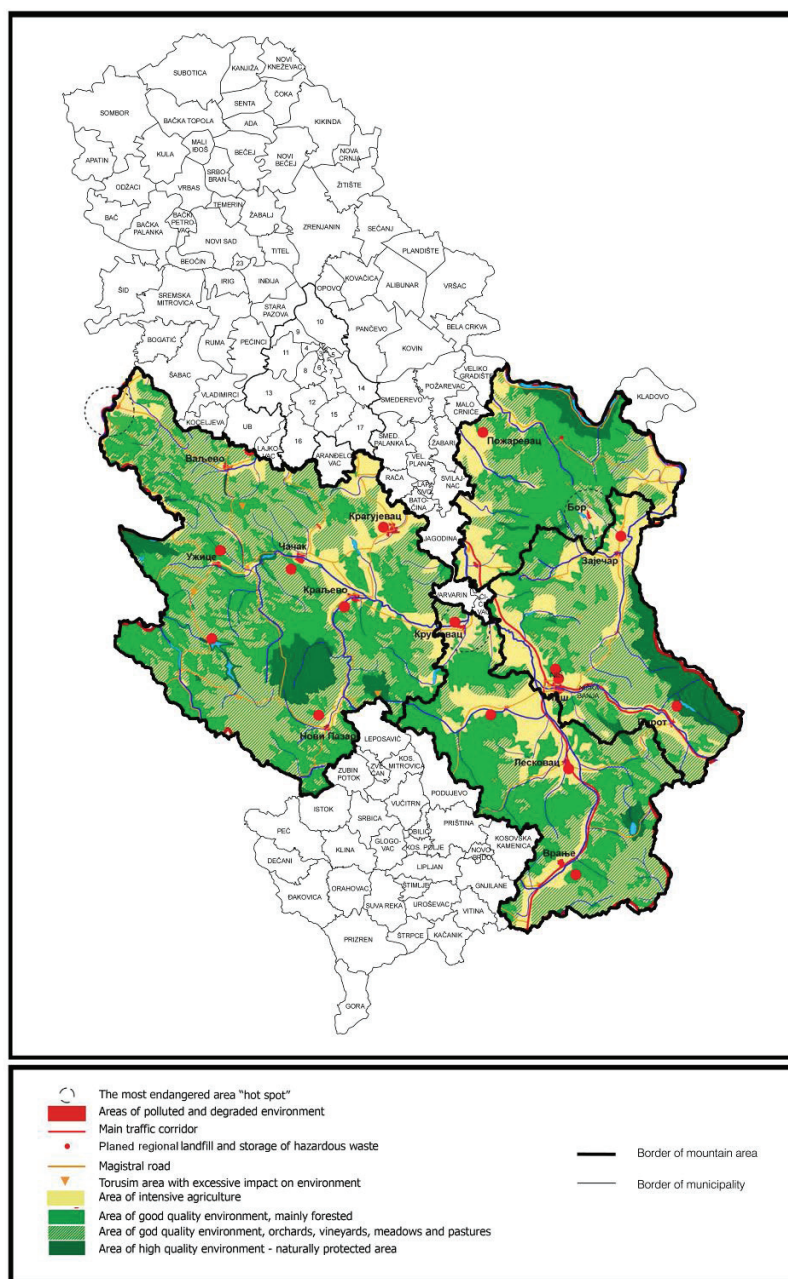
Similar to the influences on soil degradation, climate change also influences biodiversity in European mountain areas. Shifts of vegetation zones, caused by climate change (temperature increase), bring lower zones to higher altitudes (Gottfried, Pauli, Grabherr, 1998; UN, 2000a; Mihai, Savulescu, Sandric, 2007), while the ecosystems of the already highest zones are being reduced increasingly, with no place to shift in search of the climate conditions they were originally adapted to. This process has been detected in the Romanian and Polish Carpathians (Mihai, Savulescu, Sandric, 2007), the Scandinavian Mountains and Eastern Alps over the last 200 years (Gottfried, Pauli, Grabherr, 1998). Those shifts make complete ecosystems very fragile (Saniga, 2000), especially small populations of endogenous origin in contrast to invasive species which extensively conquer new areas (Gurung, et al., 2009) thus decreasing biodiversity.

Temperature increase and extreme shifts between dry and rainy periods cause forest fires, landslides and droughts, further affecting wild and cultivated biodiversity in Serbia. Map 4-1 shows that the areas predisposed to forest fires and landslides in Serbia are part of the Balkan Mountain Massif, while only landslides are recorded on the central axis of the Rhodopians and Northern Dinaric Alps.

It is important to mention that the temporary effects of temperature increase have also given some positive results in Northern Europe (IPCC, 2007b): the vegetation period has been prolonged and resulted in an increase in yield, forest expansion and reduction of heating costs. Despite this, the continuation of human-induced warming will give negative consequences even in the north of the European continent if not stopped in time (IPCC, 2007b).

In addition to the slow and successive impact of climate change, the biodiversity of mountain areas is endangered by the severe impact of human activities. Namely, activities such as clear-cutting forests, soil pollution, inappropriate agriculture, building, tourism and generally irresponsible management can cause instant negative results for biodiversity. Uncontrolled actions by individuals have the most obvious influence on biodiversity in Serbia, such as improvised landfills, illegal building and forest cutting.

Map 4-2: SMA – Environmental Quality (2008)¹⁵



Source: based on RASP, 2009

An article by R. Ristić et al. (2009) openly speaks about action uncoordinated with legislation taken by state institutions, such as clear-cutting in naturally protected areas because of ski-lift construction; and interviews with the Leading Spatial Planner in the City of Užice and the Head

¹⁵ Area of polluted and degraded environment: exceeded limits of permitted air pollution, urban areas, open mine pits, regional landfills, powerplants, high-way corridors, streams in class IV and more polluted; area of good quality environment: forest lands, tourist zones with controlled development, agricultural zones, naturally degraded areas, meadows, hunting and fishing areas and streams in class II; area of high quality environment: naturally protected areas, bogs, mountain summits and hardly accessible terrains and streams in class I.

of the Economy and Finance Department in Kuršumlja municipality¹⁶ testify to the problem of illegal building. In Užice there is a recognised need to regulate building outside of urban areas, which is not obligatory by law, and in the case of the municipality each request must be individually considered instead of commonly being regulated under a plan. For this reason, Prolom Banja – a spa settlement – in Kuršumlja municipality has been densely built up with no permits issued by the authorities.

In general, it has been noted in the Spatial Plan of the Republic of Serbia (RASP, 2010) that tourism centres have excessive impacts on the environment, thus affecting biodiversity (Map 4-2). Humans have interfered with most of the forests in European mountain areas, for example, in Tatras National Park in Slovakia, two thirds of forests were affected by logging or reforestation (Saniga, 2000). Those are the actions of irresponsible management, with similar forms existing in other European mountain areas, too. The air pollution has indirectly caused the reduction of forest areas in some parts of the Carpathians (Sramek et al., 2008) and at a higher altitude in the Czech Ore Mountains (Sramek et al., 2008); also, nitrogen pollution in the soil has been further transmitted into the water, thus causing loss of biodiversity in the Austrian Alps (Dirnböck, Mirtl, 2009).

Clear-cutting forests is certainly the most radical way to negatively influence biodiversity. This was a common action among European countries in the socialist regime (Saniga, 2000; EAA, 1995; Gurung et al., 2009), with some of the most recent cases happening in parts of the Ukrainian Carpathians (Gurung et al., 2009). Even intentional reforestation carelessly planned and conducted can harm biodiversity because complex sets of species are being simply replaced with only one or a few other species, often those that did not originally belong there. Reforestation by allochthonous species has thus taken place in some parts of the Pyrenees (Santos, 2004) and Czech mountains (Sramek, 2000; Hajduchova, 2007) where in the forests affected by air pollution the original vegetation was exchanged with species more resistant to pollutants. Forests in Serbia are no exception, and the result has been a reduction in biodiversity over the last twenty years (RASP, 2010).

One of the results of inadequate and uncontrolled reforestation is the fact that forest land in European mountain areas is increasing (based on SORS, 1997; Andre, 1998; Tappeiner U., Tasser, Walde, Tappeiner G., 2005; Mihai, Savulescu, Sandric, 2007; based on SORS, 2008; Valle, Lanedica, Pilli, Anfodillo, 2009), while at the same time biodiversity is decreasing. An intensive abandonment of agricultural land has induced considerable changes in phyto-mass since the middle of the 20th century (Tappeiner, Tasser, Walde, Tappeiner, 2005). Abandoned land has been significantly replaced with spontaneous vegetation – shrubs, bushes and eventually forests (Arriaza, Guzman, Nekhay and Gomez-Limon, 2005; Lasanta, Begueria, Garcia-Ruiz, 2006; Mihai, Savulescu, Sandric, 2007; Valle et al., 2009), which can be significantly less diversified than cultivated agricultural land (González Bernáldez, 1992). The process of parallel forestation and decrease in biodiversity has also been confirmed in the case of Serbia in an

¹⁶ Both interviews were conducted in July 2009.

interview conducted with an expert on rural development and policy¹⁷. Thus, forest land has increased from 1 % to 60 % in the Massif Central – France since 1900 (Andre, 1998); this increase was almost 2 % in Serbia from only 1996 to 2007 (based on SORS, 1997; SORS, 2008); and no area was deforested, only reforested in the Italian Alps between 1991 and 2003 (Valle et al., 2009). A similar trend is noted in Romania and generally in the Carpathians (Mihai, Savulescu, Sandric, 2007).

Nevertheless, increased phyto-mass has not been followed by an increase in biodiversity. Indeed, studies over European mountain areas have shown: firstly, while phyto-mass increased by 21.7 %, phyto-diversity decreased by 6.6 % and ecosystem diversity by 12 % in Alpine regions between 1865 and 1970 (Tappeiner, 2005); and secondly, Spanish (Collantes, Pinilla, 2004), Alpine (Valle et al., 2009), Romanian (Mihai, Savulescu, Sandric, 2007), Balkan (EEA, 1999; Balkan Foundation for Sustainable Development [BFSD], 2008), French (Andre, 1998) and some other mountain areas of Europe (Spehn, Liberman and Körner, 2006) have lost biodiversity. Also in the case of Serbian mountain areas, analysis for the last twenty years has shown a loss of biodiversity (RASP, 2010).

In summary, the problem of biodiversity loss is common for all European mountain areas. On the one hand it is affected by natural laws, but on the other hand it is radically influenced by uncontrolled or insufficiently planned human actions and lack of management. Therefore, the challenge for Serbian mountain areas is to succeed in controlled and responsible management of natural resources in mountain areas, especially those under official protection.

4.1.5 Negligence of Landscape Values – Threat to both Ecological and Economic Functions

The value of landscape is primarily in relation to aesthetic experience, which can be taken as a subjective category. But, the importance of landscape exceeds the borders of a simply subjective category when it is recognized as a reflection of an area's identity and when landscape diversity relates to biodiversity itself.

Land abandonment not followed by organised management and adequate planning causes landscape simplification and homogenisation (Andre, 1998; Plieninger, 2007), which is not considered as positive change whether for the identity of an area (Höchtl, Lehringer, Konold, 2005), for the identity of the local population (Plieninger, 2007), or for the attractiveness important for tourism (Andre, 1998). Homogenisation of landscapes is also influenced by roads and other visible linear infrastructures which fragment space and, if not maintained adequately, harm the landscape quality (Keller, Heimgartner, 2001).

It is argued that importance of landscape, particularly forests, in planning is underestimated in the spatial planning of European mountain areas (Geneletti, 2007). Nevertheless, interest for landscape in general (not only mountainous) has a much longer tradition in Western European countries such as the United Kingdom, Belgium and Germany, than in Eastern countries

¹⁷ Interview conducted with an expert in rural development and rural policy, a Professor at the Faculty of Agriculture – Belgrade University, Chair of Agricultural Economics and the Market, research interests: agrarian policy and support, agriculture in international integration process, structural changes in agriculture, rural development policy, rural economics and market, rural poverty and social inclusion (conducted in June 2009).

(Vasiljević, Živković, 2009). Serbia has been one of the last to introduce the topic of landscape in planning: neighbouring Slovenia and Croatia did it during the last decade of the 20th century, while the Spatial Development Strategy of the Republic of Serbia (RASP, 2009) was the first planning document to treat landscape as an important part of spatial development (Vasiljević, Živković, 2009).

So, the topic of landscape has just recently become part of the focus in Serbia and other eastern European mountainous countries. Therefore, future planning and practice must not neglect the relevance of landscape planning in order to support local and regional identity, the development of tourism and biodiversity.

4.2 Demographic Trends and their Impacts

The growing population in 19th century Europe was scattered throughout the countries' territories, founding their economies on agricultural production, therefore predominantly concentrating in rural areas. Significant changes started around the 1850s, initiated by industrialisation and urbanisation. These changes started in Western Europe, later spreading to its eastern countries. Therefore, countries have gone through similar phases of a general model of changes but in a different time sequence. As a result, cities emerged as leaders in economic development, at the same time being targets for emigrants from the rural areas and the concentration of new types of infrastructure. All the changes have induced processes that are responsible for the population structures and population movements as they are nowadays. Therefore, this section presents different aspects of contemporary demographic problems with regard to population distribution and density, migration, birth-rate, age structure and gender imbalance in European mountain areas.

4.2.1 Low Population Density – Challenge for Infrastructural Endowment and Social Relations

Mountain areas are generally considered as isolated and sparsely populated areas, but not necessarily meaning that there is no location or settlement with a higher concentration of inhabitants. Patterns of population distribution are relevant information for planning and endowment of technical and social infrastructure; therefore, this is going to be considered in the following paragraphs.

The example of Massif Central in France shows a general trend of population density decrease in European mountain areas since the 19th century: at the beginning of the period population density was 100 inhabitants per km² while it dropped to less than 8 per km² at the end of the 20th century (Andre, 1998). The project of the European Commission (including 23 European mountain countries¹⁸) states that their average population density was 47 inhabitants per km² in 2001 (European Commission, 2004), which is almost half as much as the average population density in Serbian mountain areas¹⁹ - 71 inhabitants per km² in 2002 (based on SORS, 2004a

¹⁸ Those countries are listed in Table 1-5, except Serbia which is additionally included.

¹⁹ This refers to an average of 78 mountain municipalities in Serbian mountain areas. In contrast, population density in Table 1 (68.7) refers to the overall population density in Serbian mountain areas, regardless of its distribution by municipality.

and 2004b). Making a comparison between countries, there are significant differences: there are less than ten inhabitants per km² in Sweden, Finland and Norway and at the same time more than a hundred inhabitants per km² in Germany, Hungary and Switzerland (Table 4-1).

Table 4-1: EMA and SMA - Area, Population Number and Population Density (2001)

Country	Mountain Area (%)	Population in mountain areas (%)	Population Density in mountain areas (inhabitants/km ²)	Population Density, National Average (inhabitants/km ²)
Austria	73.34	49.8	64.0	95.7
Belgium	4.20	0.8	64.7	335.2
Bulgaria	48.76	45.6	67.9	78.4
Cyprus	47.44	14.3	35.0	74.8
Czech Republic	32.26	23.4	92.6	129.7
Finland	49.37	12.0	3.6	15.9
France	25.25	14.3	60.4	94.0
Germany	14.72	10.1	157.6	229.7
Greece	77.88	49.6	51.8	81.8
Hungary	4.70	6.9	158.5	110.8
Ireland	10.61	2.6	13.7	55.8
Italy	59.94	32.6	100.6	186.6
Luxembourg	4.43	1.5	59.1	338.0
Norway	91.84	63.4	7.8	13.9
Poland	5.20	5.8	139.4	124.0
Portugal	39.12	26.5	75.8	112.1
Romania	37.84	24.9	61.6	93.3
Serbia*	58.2	41.3	68.7	97.0
Slovakia	61.98	48.6	86.0	110.3
Slovenia	77.98	64.9	81.8	98.3
Spain	55.59	38.5	55.2	80.6
Sweden	50.85	6.9	2.5	19.8
Switzerland	93.30	84.2	163.8	176.4
United Kingdom	25.21	4.3	40.0	236.5

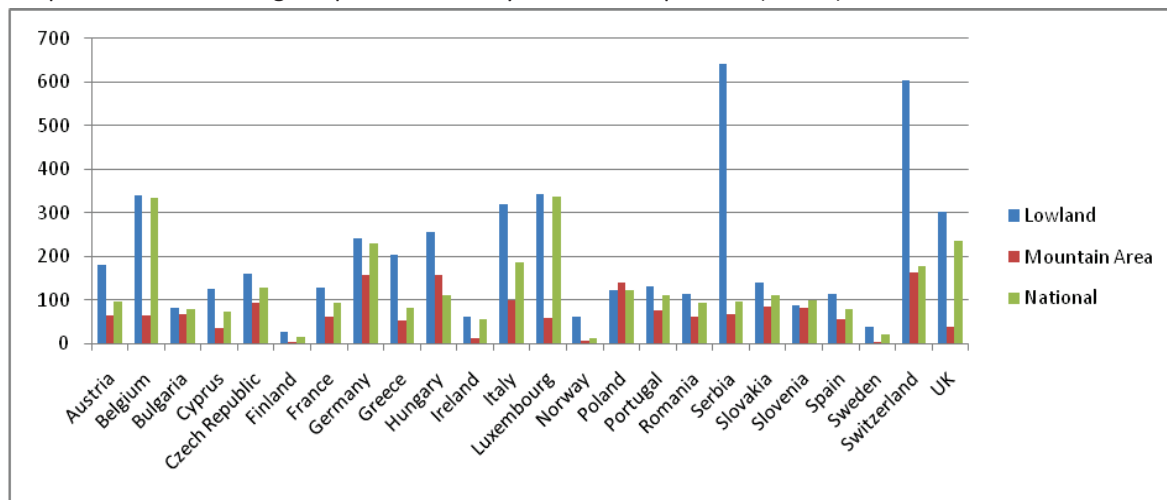
Source: EC, 2004

*Source: based on SORS, 2004a and 2004b. The population census in Serbia was one year late, therefore the data shown are for 2002.

There are two reasons behind the significant difference between the average density of Serbian mountain municipalities and other European municipalities. The first reason is that average density in other European mountain municipalities is influenced by the extreme values in Scandinavian countries, where the very low population density is the result of extreme climate conditions in the polar circle. The other reason is the size of Serbian mountain municipalities which are considerably larger than other European municipalities, thus often including plane areas which are more populated than the mountainous areas. Moreover, Hungary and Poland

are the only European mountain countries to record a higher population density in their mountain areas than their national averages (Graph 4-1).

Graph 4-1: EMA - Average Population Density, inhabitants per km² (2001*)



Source: EC, 2004; the indicator for Serbia is calculated based on SORS, 2004a and 2004b.

*The population census in Serbia was one year late, therefore the data shown are for 2002.

Differences with regard to population density also emerge between mountain massifs within one country (Map 4-3). Thus one of the Serbian mountain areas – the Carpathians – stands out with a population density almost half (46.6 inh/km²) that of the Dinaric Alps (72.6 inh/km²), the Rhodopians (72.6 inh/km²) and the Balkan Mountains (71.4 inh/km²). The lower population density in the Carpathians can be assigned to the already traditionally lower concentration of population in this areas and, as stated in the Spatial Plan of the Republic of Serbia (RASP, 2010), to functionally weak urban centres.

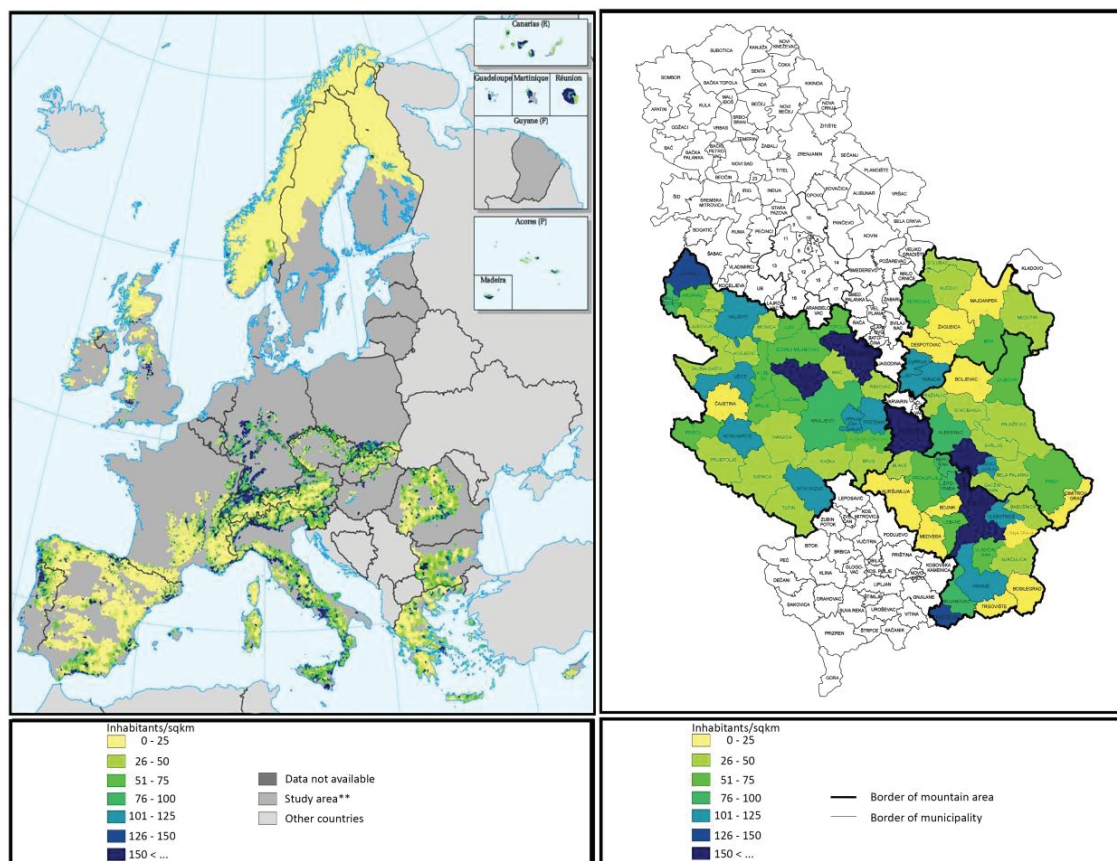
Overall, written sources state that differences in population density within the mountain massifs in one country are in relation to the percentage of mountains (above 600 m altitude) and settlement functions (urban or rural). Thus, based on data presented by O. Dželebdžić and V. Jokić (2003) and the Statistical Office of the Republic of Serbia (2004a and 2004b), the most populated municipalities in Serbian mountain areas do not exceed 30 % of their territory above 600 m, while those with the most sparse population distribution have more than 70 % mountainous territory. Again, there are a few exceptions among Carpathian municipalities: Majdanpek – 25 inh/km²; Kučevo – 26 inh/km²; and Golubac – 27 inh/km² where mountainous territory does not exceed 30 %.

The SARD-M [Sustainable Agriculture and Rural Development – Mountain] national reports²⁰ for some Carpathian and Balkan countries state significant differences in population density between villages and cities. Densely populated areas are mainly urbanised locations within massifs, more easily accessible or places in valleys and depressions. Thus, some parts of the Carpathians in Poland and Czech Republic have more than 200 inhabitants per square km, exceeding the national averages that are 120-130 inhabitants per square km (Hajduchova 2007;

²⁰ See Hajduchova, 2007; Rusztecka, 2007; Burdusel et al., 2006; Ginovska, 2007; and Mileva, 2008

Rusztecka, 2007). At the same time, some other parts of the Carpathians are populated with only ten or fewer inhabitants per square km (Ibid.). Similarly, D.J. Moscoso (2006) indicated that uneven population structures exist with this regard in Andalusia (Spain), undermining its development.

Map 4-3: EMA and SMA - Population Density, Inhabitants per km² (2001*)



Source: EC, 2004; map of Serbia is elaborated by the author, based on SORS, 2004a and 2004b

*The population census in Serbia was one year late, therefore the data shown are for 2002.

**Study area refers to the area defined in EC final report (2004)

Also in Serbia, the difference in population density between one of the least urbanised municipalities, Crna Trava, and the most functionally developed mountainous municipality, Niš, is extreme: 8.2 inh/km² compared to 554 inh/km² respectively (based on SORS, 2004a and 2004b). Comparing population density in Serbian mountain areas above 600 m, which is 32 inh/km², with overall Serbian mountain areas, which is 68.7 inh/km², it is clear that the difference is more than double (Table 4-2). Actually, areas above 600 m comprise only around 1 % of urban settlements, which means that they are functionally rural. Moreover, measured on the level of overall Serbian mountain areas, the proportion of the territory and population inhabiting the territory is relatively balanced: 58.2 % of the territory is inhabited by 41.3 % of the total population (based on Statistical Office of the Republic of Serbia [SORS], 2004a and 2004b). Nevertheless, when comparing 26.5 % of the mountain territory (above 600 m altitude) and its population size of 9.6 % (based on Malobabić, Bakić, 2003), a misbalance can be seen. This shows that population distribution is not equal and that urban centres situated in the

valleys²¹ (Jokić, 2003; based on SORS, 2004a) are those which are predominantly inhabited, while rural areas remain sparsely populated (Table 4-2).

Table 4-2: SMA - Change in Population Size and Population Density (1948-2002)

	Population		Density (inh/km ²)		Population Increase
	1948	2002	1948	2002	1948-2002
SMA (Mountain Municipalities)	2,819,884	3,099,014	62.5	68.7	9.9 %
Mountains (area above 600 m altitude)	1,251,477	721,453	61	32	-42.3 %

Source: SORS, 2004a and 2004b; Jokić – internal dataset of the Institute of Architecture and Urban & Spatial Planning of Serbia [IAUS], 2003

The sparse density of people is followed by a sparse density of households and a sparse settlement network. The number of settlements with only 10 inhabitants in Serbian mountain areas was 25 in 2002, which is ten more than a decade before that (based on SORS, 2004a). Similarly, small centres consisting of 15-20 households are predominant in mountainous Spain (Moscoso, 2006) while M. Mileva (2008) states that Bulgaria is another example of mountain areas with a very low density of settlements.

Generally speaking, there are three major groups of European mountain areas with regard to population density. The highest concentration of inhabitants is recorded in those countries where mountain areas are an insignificant part of the national territory (e.g. Germany, Hungary and Poland) or, in contrast, where almost the complete territory is covered by mountains (e.g. Switzerland). The other extreme – countries with a very low population density within their mountain areas – is Scandinavian countries where mountain areas are not defined only by altitude, but also comprise lowlands with extreme climate conditions (Finland, Norway and Sweden). The rest of the European mountain areas, including Serbia, belong to the group where population density is closer to the average. However, one fact common to all European mountain countries is the significant difference in population density between urban and rural areas. Thus the challenge in the endowment and sustainability of the infrastructure and services in small settlements characterises European mountain areas in general. Most European mountain areas are exposed to, as F. Bigaran named it, a “magic circle” where depopulation induces the reduction of social services, consequently leading to further population decrease (EC, 2002).

²¹ There are 23 urban settlements in SMA above an altitude of 600 m. Only seven of them completely occupy mountains: Nova Varoš, Sjenica, Priboj, Zlatibor and Tutin in the Dinaric Alps, and Bosilegrad and Vučje in the Rhodopians. Four of them are predominantly mountainous: Divčibare and Jošanička Banja in the Dinaric Alps; Sijarinska Banja in the Rhodopians; and Resavica in the Carpathians. Mataruška Banja in the Dinaric Alps and Dimitrovgrad in the Balkan Mountains have less than a half of their territory covered with mountains. Finally, the following ten urban settlements have mountains in a very small part of their territory: Prijepolje, Užice, Lučani, Vrnjačka Banja, Novi Pazar, Baljevac in the Dinaric Alps; Kuršumlijska Banja and Surdulica in the Rhodopians; Bor and Majdanpek in the Carpathians. In those municipalities, 38 % of their population lives in the 1.4 % of their territory which is mountainous (based on Jokić, 2003; SORS; 2004a).

4.2.2 Emigration and Low Birth-Rate – Weakening of Human Resources

The development and size of population is the result of migratory processes and natural population increase rate. According to the European Commission final report, most European mountain areas face the emigration processes (EC, 2004), which has actually been the case since the middle of the 19th century, starting with the first wave of industrialisation and, at that time, very high density in rural areas (Molina, 2000). In addition, the emigration process was also closely connected to urbanisation, where rural abandonment greatly affected predominantly rural mountain areas (Glenn, Curtis, 1992). In the first half of the 20th century, mountain areas regained a small amount of population because of mining activities, but in the 1960s, a new extreme wave of emigration occurred (San Miguel, Perez-Carral, Roig, 1999). Those processes are common for most European mountain countries, including Serbia, where the first wave of emigration coincided with gaining independence from the Ottoman Empire and the second wave resulting from industrialisation and parallel urbanisation after the Second World War (Spasovski and Šantić, 2004).

Another common characteristic for European mountain areas is emigration from rural to urban areas. Firstly, the very high population density in rural areas provoked rapid movement of people towards industrialised cities (Molina, 2000). An indication of the same dynamics in the second wave is the fact that Central Serbia had 80 % agricultural population in 1953 (Stojanović, 1990a), but only 10 % in 2002 (SORS, 2004c). Also, expert interviewees²² and some studies by the Demographic Research Centre of Serbia confirmed the emigrations that caused a serious rural exodus during the second half of the 20th century. Various studies all over European mountain areas (such as Spain, Poland, Czech Republic and FYRO Macedonia) also show that the main stream of migration is from rural to urban areas (Collantes, Pinilla, 2004; Rusztecka, 2007; Hajduchova, 2007; and Ginovska, 2007).

According to examples from three different mountain areas in Europe, e.g. Italy, Norway and Serbia, the primary population emigration destinations are the nearest cities and centres of municipalities. The sources of emigrants are mainly remote municipalities and smaller settlements (Zucca, 2006), while bigger mountainous municipalities and settlements have the role of recipients (Sandlund et al., 2004). Actually, slight population decrease at a municipal level hides the fact that most of the settlements within municipalities lose their population due to emigration to the largest settlement in the municipality (Ibid.). In the case of 25.6 % of municipalities in Serbian mountain areas, the municipal centres have more inhabitants than all the other settlements in the municipalities (based on SORS; 2004a). In this sense, the overall population of Serbian mountain areas increased by approximately 10 % between 1948 and

²² (1) Interview conducted with members of the Implementation Team for Poverty Reduction Strategy: Social Inclusion Deputy Team Manager and Coordinator for Economic Development and Employment (conducted in June 2009); (2) Interview conducted with the Ministry for Agriculture, Forestry and Water Management: Rural Development Advisor at the Department for Rural Development (conducted in June 2009); and (3) Interview conducted with a professor at the Faculty of Agriculture – University of Belgrade, Chair for Agrarian Economics and Market. Research fields: Agrarian economics; agrarian policy and agricultural support; role of agriculture in international processes of integration; structural changes in agriculture; policy of rural development; rural economics and market; and rural poverty and social inclusion (conducted in June 2009).

2002 (SORS, 2004a), but the population in mountains (above 600 m) decreased by more than 40 % (SORS, 2004a; Jokić, 2003), thus showing that Serbian mountain areas were almost equally populated in the valley bottoms and on the hillsides in the middle of 20th century. This has changed over time (Table 4-2).

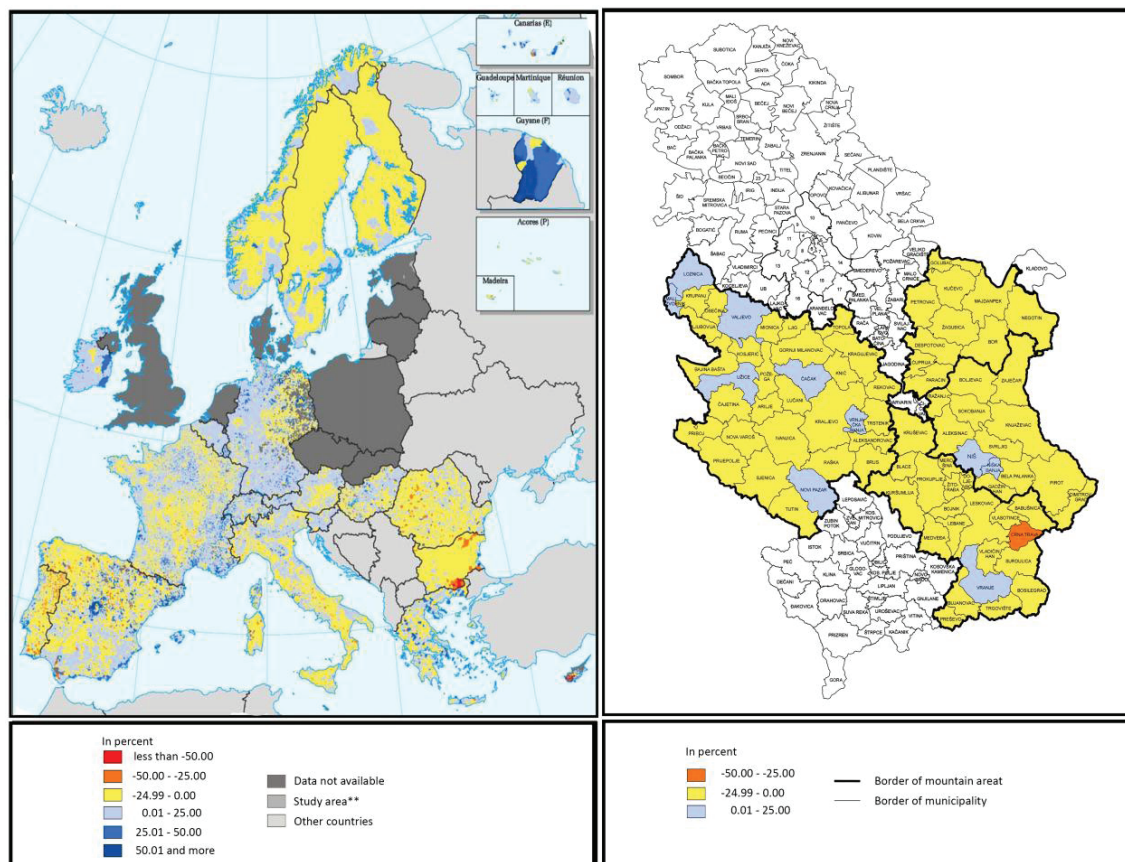
A study by the European Environmental Agency (EEA, 1999) showed that the emigrating population sample is young people and that inward migrations, if there are any, are based on the return of pensioners. The source refers to the 15 EU countries, but the same trend is also found in Serbia, as interviews with experts and the local population²³ have indicated.

Even between 1991 and 2002, Serbian mountain areas lost 9.6 % of their population (based on SORS, 2004a), partially due to emigration, but also due to negative natural increase rates. In 1981, the rural population of Serbia lost its reproductive superiority over urban areas for the first time in history – the birth rate in urban areas exceeded the birth rate in rural areas (Rančić, 1990). Naturally, having young people as the main sample in terms of emigration, the fertility capacity has decreased, further inducing a drop in the birth-rate. The birth-rate in Carpathian mountain areas used to be significantly higher than in other areas in Carpathian countries during the 20th century; but it has dropped within the last couple of decades (Illes, 2008).

Therefore, both demographic components, emigration and a drop in the birth-rate, have contributed to the depopulation of European mountain areas. Namely, from the middle of the 19th century till the beginning of the 21st century, Massif Central has lost half of its population (Andre, 1998) and, in the approximately same time period, Spanish mountain areas lost 33 % of their population (Collantes, Pinilla, 2004). In the same time period, compared to an average of 33 %, the Pyrenees in Spain lost 45 %, the autonomous Region of Aragon 56 % and the Iberian Cordillera lost 70 % of its population (Collantes, Pinilla, 2004). An extreme population decrease in mountain villages is also stated in Ukraine, Slovakia, Romania and Czech Republic (Burdusel, Kanianska, Maryskevych, 2006; Hajduchova, 2007). Between only 1945 and 2002, Serbian mountains lost 42.3 % of their population (Table 4-2). Moreover, loss of mountain population on an annual basis increases constantly: a loss of 0.1 % was recorded in 1996, a loss of 0.3 % in 2002 and another increase to 0.5 % in 2007 (SORS, 2004a). The population increased in only ten Serbian mountain municipalities: seven in the Dinaric Alps (Loznica, Mali Zvornik, Valjevo, Užice, Čačak, Vrnjačka Banja and Novi Pazar), two in the Balkan Mountains (Niš and Niška Banja) and one in the Rhodopians (Vranje). Thus, all the municipalities in the Carpathians are in population decline. Moreover, the Carpathians have experienced the highest loss of population, 16.4 %, followed by the Rhodopians with a loss of less than half of that amount, 6.4 %, the Dinaric Alps with an overall loss of 4.7 % and finally, the Balkan Mountains with the smallest loss of 2.5 % (based on SORS, 2004a) (Map 4-4). Within municipalities, urban centre populations increased, while rural hinterland mainly became emptier than before.

²³ (1) Interview conducted with the researcher and spatial planning expert from the Institute of Architecture and Urban & Spatial Planning of Serbia. Fields of interest: sustainable tourism, sustainable mountain development (conducted in June 2009); (2) Interviews conducted with the local population in Crna Trava and Kuršumljia Municipalities (conducted in September 2009).

Map 4-4: EMA and SMA – Total Population Change (1991-2001*)



Source: EC, 2004; map of Serbia is elaborated by the author, based on SORS, 2004a

* The population census in Serbia was one year late, therefore the data shown are for 2002.

** The study area refers to the area defined in EC final report (2004)

With their loss of population, European mountain villages also lose entire settlements. Even though population loss is stated for various European mountain areas, the problem of dying villages is particularly stressed in the Balkan Mountain Massif. According to the census data (SORS, 2004a) eight villages in Serbian mountain areas remained without inhabitants between 1991 and 2002: two in the Balkan Mountains (Repušnica – Knjaževac Municipality and Koritnjak – Niška Banja Municipality) and six in the Rhodopians (Vukojevac, Rastelica and Tačevac – Kuršumljia Municipality; Đorđevac – Bujanovac Municipality; Pljačkovac – Vranje Municipality; and Gare – Preševo Municipality). Additionally, according to V.M. Milošević, M. Milivojević, J. Čalić (2008), five other villages were added to this list by October 2007 (one more in the Balkan Mountains – Papratna in Knjaževac and four in the Rhodopians – Barje in Bosilegrad, Kolunice in Surdulica, Ostrozuba in Crna Trava and Javorja in Vlasotince). The authors expect this to repeat in the case of 15 additional settlements (with less than ten inhabitants) in the near future (Map 4-5)²⁴. However, Ginkova (2007) indicates the severity of the problem in Macedonia, where 121

²⁴ The emigration from villages in Kuršumljia, Bujanovac and Preševo is partially caused by instability and ethnic reasons in the border area with Kosovo.

Map 4-5: SMA – Emptied Settlements and Villages with less than ten Inhabitants (1991-2007)



52

diminishing agro-biodiversity and thus shutting down the remaining centres of specific cultural and traditional patterns. In addition, the aged population structure weakens the overall human resources in mountain municipalities, which can hardly be a pillar for potential community building in the future.

4.2.3 Aged Population Structure – Increased Needs for Social Care and Reduced Human Capacity

With the emigration of young people and predominant immigration of pensioners, European mountain areas face the problem of an aged population structure. The age of mountain populations in Serbia has increased. Its mountain municipalities had a young population of 19.5 % (between 0 and 14 years old) and 11.8 % of the population above 65 years old in 1991; but, the census in 2002 showed that the older population (17.3 %) exceeded the young population (16.1 %) for the first time (based on SORS, 2003a). Moreover, it is shown in Table 4-3 that the percentage of older individuals and other aging indicators (old-age-dependency ratio and age index) present Serbian mountain areas as the oldest when compared to EU-27, the total Serbian population and population in Serbian lowlands. The distribution in municipalities is shown on Map 4-6, where most of them belong to the group of old (35-39), very old (40-43) and oldest demographic age (43+)²⁵. There are a few exceptions e.g. Novi Pazar and Tutin municipalities in the Dinaric Alps, as well as Preševo and Bujanovac municipalities in the Rhodopians. In those cases, the population is in a state of demographic maturity (25-29) and on the threshold of being a demographically old population (30-24) (SORS, 2003a).

Table 4-3: EU27 and Serbia - Indicators on Demographic Age (2002)

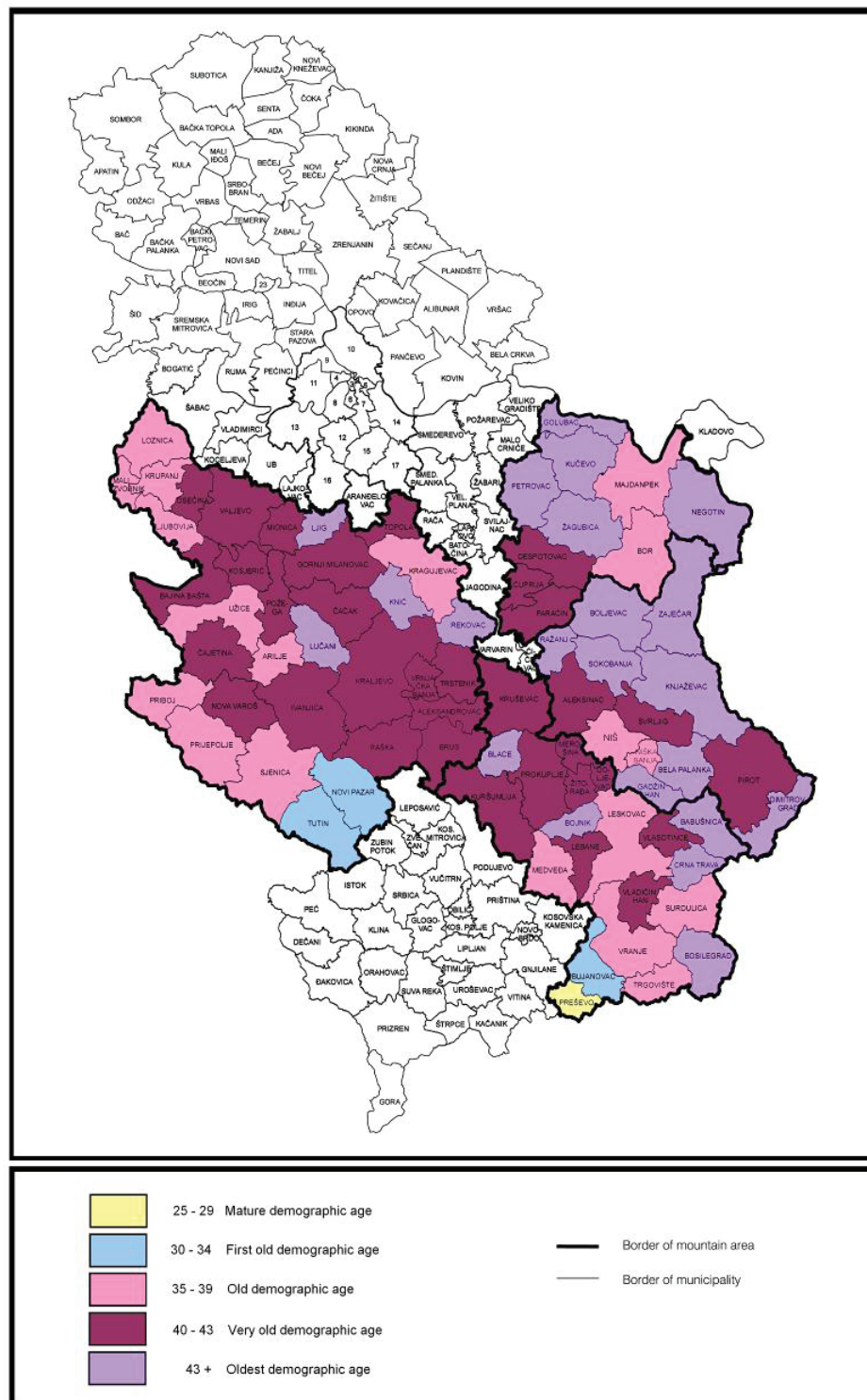
Aging Indicator	EU27	Serbia		
		Total	Lowlands	Mountain Areas
65+ (%)	16.0	16.4	15.8	17.3
65+/15-64 (%)	23.8	24.2	23.0	26.0
65+/0-14 (%)	95.0	103.2	104.0	108.3

Source: calculated from EUROSTAT data (2011) and SORS data (2003a)

Different sources argue that most European countries have aging populations, too, especially in rural areas (Bartoli, Palombo, Bartoli, 2009; Skreli, 2007; Hajduchova, 2007; Rusztecka, 2007; and Ginovska, 2007). The Massif Central already had the oldest population in Western Europe in 1998 (Andre, 1998), while the percentage of elderly increased in Romania between 1966 and 2002 (Nancu, Guran-Nica, Persu, 2009).

²⁵ According to the Statistical Office of the Republic of Serbia, there are seven age groups in terms of average population age (demographic age): below 20 - early demographic youth; 20 to 24 – demographic youth; 25 to 29 – demographic maturity; 30 to 34 – threshold to demographically old population; 35 to 39 – demographically old population; 40 to 43 – demographically very old population; 43 and more – demographically the oldest population.

Map 4-6: SMA - Demographic Age (2002)²⁶



Source: based on SORS, 2003a

With some exceptions, the European population in general and particularly in rural mountain areas faces a continuous increase in the age structure. F. Bigaran (EC, 2002) stresses that

²⁶ Demographic age is calculated as the median age of the population.

changes in age structure induce an increasing demand for specialised social and healthcare services. A significant decrease in the fertile and working-able population also questions the quality of the overall human capacity and negatively influences chances for economic development. The case of Serbian mountain areas is also characterised by its negligence to provide services for young people, which stimulates their exodus; therefore, social care for the elderly might not seem like a priority and it may represent a challenge in circumstances where there are only few young people to conduct the services.

4.2.4 Gender Imbalance – an Obstacle for Family Formation and Securing Posterity

Combining interviews in Serbian mountain areas and written sources about the Czech Carpathians and Scandinavian Mountain Massif, a particular imbalance in the gender structure appears differently in two age groups regarding the rural population. In the first age group – the rural population of working age (15-64) – it is found that the percentage of the male population exceeds the percentage of female population, while in the age group over 65, the female population has the advantage. Referring to the overall rural population, I.A. Morell (2009) states that agricultural activity in Nordic countries is characterised by masculinisation. In the case of Serbia, the issue of masculinisation of the rural workforce is addressed by both expert interviewees²⁷ and the local population. Additionally, official statistics show that the male population is more numerous in rural settlements, even though the female population prevails in the urban population, with both measured as a total or cohort of working age (15-64) (based on SORS, 2003a). Nevertheless, those differences reach mainly 1 or 2 % and in only a few cases 5%, but not more (based on SORS, 2003a). The United Nations Development Programme [UNDP] study on small rural households in Serbia (Bogdanov, 2007) showed that the difference between percentage of males and females (52:48 %) is larger than presented in official statistics.

In the age group over 65 it is noted in the case of the Czech Carpathians that the difference in the percentage of male and female population is in favour of women with 16.5 % in comparison to men with 11 % (Hajduchova, 2007). This is also true in the case of Serbian mountain areas when judged, on the one hand, by the general fact that females live longer than males and, on the other hand, by the situation observed during field work. Unfortunately, statistical data in Serbia does not give an insight into gender structure according to age groups, so exact data cannot be shown here.

Finally, with regard to gender imbalance, it can be stated that the European mountain areas taken into account here share the same pattern, particularly speaking about the rural population. The gender imbalance between individuals of reproductive age in Serbia leaves many men without potential partners, which represents an obstacle for forming families in those circumstances, further shutting down the reproductive capacity and seriously impairing the posterity of the entire community.

²⁷ (1) Expert for rural development and policy ; (2) Director of Republic Agency for Spatial Planning (both conducted in June 2009)

4.3 Economic Development

In this section different aspects of economic problems in European mountain areas are brought up. The problems which have emerged are specific geographic conditions, economic transition, land abandonment, unemployment, low incomes, the market of products and labour. The results are based on compiled available written sources, statistical data and data gathered in interviews conducted with national and local Serbian government and the local population, as well as scientific studies, plans and reports about other European mountain areas.

4.3.1 Specific Geographic Conditions – Dependence on Natural Factors, Increased Construction and Maintenance Costs

By their definition, mountain areas comprise high altitude regions with harsher climate than lowlands, therefore having a shorter vegetation season and also steep slopes which have a strong tendency for erosion. Another type of global change in mountain areas is climate change. All the aspects influence economic activities, infrastructure and biodiversity in European mountain areas.

Problems that populations need to deal with in mountain areas are various natural hazards such as floods, storms, and heavy rain-falls, each having its impact on costs and losses in agricultural production (Nöthiger, Elsassser, 2004; Burdusel, Kanianska, Maryskevych, 2006; Gurung et al., 2009). Agricultural production in Serbian mountains is also constrained by natural disadvantages such as bad soil quality, a shorter vegetation season, etc. (Nikolić, 2003; Dželebdžić, Jokić, 2003), which brings lower yields and consequently less profit (Burdusel, Kanianska, Maryskevych, 2006).

In general, difficult geomorphologic conditions increase costs in infrastructure investments, as well as for their maintenance. Linked with this, the cost of investment in economic activities, inevitably depending on infrastructure, also rises. M.I. Ayuda and V. Pinilla (2003) argue that tourism is considerably dependent on infrastructure and natural hazards which disrupt road communication indirectly harm the tourist season (Nöthiger, Elsassser, 2004). Damage to ski-lifts, ski-cabins and other specifically tourist infrastructure have a direct impact on tourism and their costs take a much longer time to be recovered (Ibid.).

Furthermore, it is considered that a big challenge for summer and winter tourism in the future for mountains will be the impact of climate change (Steiger, Mayer, 2008). Change of air temperature is the most direct indicator for tracing the consequences of climate change in mountain areas. In those terms, studies on Serbian mountain areas, as well as Europe's largest mountain ranges – the Alps and Carpathians, show a marked annual temperature increase. Namely, an increase of 1.2 °C was recorded between 1950 and 2008 in Serbia (Intergovernmental Panel for Climate Change [IPCC], 2007a; Republic Agency for Spatial Planning of the Republic of Serbia [RASP], 2010); the winter temperature was 3.2 °C above average in Tyrol between 2006 and 2007 (from December to February) (Steiger, Mayer, 2008); also, the annual average temperature increased from 0.3 to 0.9 °C in different parts of the Carpathians between 1962 and 2000 (Csagoly, 2007). The exception with regard to this is the region of South-Eastern Serbia, where the temperature in this period slightly decreased (this

region territorially corresponds to the Rhodopian mountain area) (RASP, 2010). Increase in temperature was followed by changes in precipitation, varying at the local level throughout Europe. Thus, average annual precipitation showed an increasing trend between 1991 and 2005 in the Carpathians of Romania and Czech Republic (Gurung, Bokwa, Chelmicki, Elbakidze, Hirschumugl, et al., 2009), while Serbia prevalingly has the character of south European countries in which precipitation decreased (IPCC, 2007a). Nevertheless, a common change for Serbian mountain areas (Ibid.), the Czech and Romanian Carpathians (Gurung, Bokwa, Chelmicki, Elbakidze, Hirschumugl, et al., 2009), the Bulgarian mountains (Petkova, Koleva, 2001), the Pyrenees (Dessens and Bücher, 2004) and the Scandinavian mountains (Baltic Marine Environment Protection Commission, 2007) is a decrease in snow precipitation, thickness of the snow cover and duration of the snow period. Firstly, use of snow-makers is more costly and secondly, temperature increase might be so high that snow-makers will not be efficient enough. Also, anticipated snow melting and decreased precipitation in the winter period influence the most Alpine areas where tourism, based upon skiing, is endangered by its main resource – snow (UN, 2000a; EC, 2004).

Basically, all European mountain areas meet similar difficulties with regard to their geographic characteristics. Only parts of the Scandinavian Mountain Massif can be taken as an exception because their lowlands are included into the mountain areas due to their extreme climate conditions. Features such as higher construction costs, maintenance costs and the cost of protection against natural hazards, as well as a lower agricultural yield are difficulties that people have been encountering for a long time, while the impact of climate change has been constantly evolving, thus requiring consideration in future development and investment in Serbian mountain areas.

4.3.2 Economic Transition – Effects of Delay

Industrialisation and urbanisation did not appear in all European countries at the same time, neither did they do so in the European mountain areas. The delay for some European mountain areas has caused a delay in development, but also the possibility for those mountain areas to learn from the experiences of the “innovators”.

Agriculture used to be a basic activity in mountain areas before the industrial revolution. In contrast to Alpine countries, agriculture is still the main activity in the rural mountain areas of the Carpathians (Mihai, Savulescu, Sandric, 2007) and the Balkan Mountain Massif (Balkan Foundation for Sustainable Development [BFSD], 2008), even though it is in decline (Skreli, 2007; BFSD, 2008). Starting from Western Europe, a significant wave of industrialisation, followed by urbanisation, first arrived in Great Britain, France and Germany (middle of the 19th century), later on in South-Western Europe (end of the 19th century) (Collantes, Pinilla, 2004), and finally in Central and Eastern Europe (in the 20th century) (Plieninger, 2007).

In Serbia, part of Central and Eastern Europe, intense changes and economic transformations happened during the communist era (from the middle to the end of the 20th century) and additionally, in the transition that came afterwards. Actually, from 1945 to 1989/1990, the economy in mountain areas of Central and Eastern Europe was based on homogenised

agriculture (low diversity of cropping plants) and forestry and extraction of raw materials, organised within the state cooperatives (Burdusel, Kanianska, Maryskevych, 2006). In the 1990s, land was privatised, but it was not followed by any significant changes in the size of land parcels or by a decreasing trend in activities (Hajduchova, 2007). There, large state cooperatives existed, but their markets were lost in the economic transition which started in the 1990s (Mihai, Savulescu, Sandric, 2007; Skreli, 2007; BFS, 2008). In the process of transition, ownership of agricultural land was privatised to a great extent, but the establishment of private stakeholders, who mediate between producers and the market, had not yet been developed (Hajduchova, 2007).

The greatest leap between Eastern European mountain areas and western mountain areas occurred when tourism, as a leisure activity, was already being developed in the second half of the 19th century in the Alps (Küchli, Stuber, 2000). In modern times, Alpine countries still base development in their mountain areas on supporting the diversification of activities (EC, 2000), which has become an example followed by other countries due to its success.

Diversification of functions and privatisation of land have not appeared simultaneously in all European mountain areas. Actually, the Alpine mountain massif has taken a leading role, subsequently followed by the Pyrenees, Carpathians and finally the Balkan Mountain Massif. Due to the positive results of diversification and privatisation in Alpine countries, this model has been taken over to be implemented in the Carpathians and in Balkan countries.

4.3.3 Land Abandonment –Negligence of Resources

Change and relocation of the main economic activities and population towards cities has hindered the position of predominantly rural mountain areas. Compared to other activities and economic sectors, agriculture brings less profit (San Miguel, Perez-Carralv and Roig, 1999), especially in Eastern Europe where farmers work with inadequate mechanisation (EC, 2004). Together, this all contributes to land abandonment within European mountain areas (EEA, 1999). Thus, agricultural activity decreased from 1850 to 2000, leaving agricultural land abandoned and turning many pastures and meadows to scrubs and forests (Ortigosa, Garcia-Ruiz, Gil, 1990; EEA, 1999; Poyatos, Latron, Llorens, 2003; Tappeiner et al., 2005; Burdusel, Kanianska, Maryskevych, 2006; BFS, 2008; Mihai, Savulescu, Sandric, 2007; Valle, Lanedica, Pilli and Anfodillo, 2009). This process took around 70 % of agricultural land (meadows and pastures) and replaced it with scrubs and forests in the Alps (Tappeiner et al., 2005) and also in the Spanish Pyrenees (Serrano-Muela et al., 2008; San Miguel, Perez-Carral, Roig, 1999). During the 1980s alone, 245,000 ha of agricultural land in Portugal was abandoned (Plieninger, 2007), whilst since the 1950s, grazing in Romania has been in decline (Mihai, Savulescu and Sandric, 2007) and in the Carpathians of Czech Republic, arable land has also declined (Hajduchova, 2007). Interviews conducted with experts and the local population in Serbian mountain areas confirmed that the process of forestation and abandonment of agricultural land has been more pronounced since the middle of the 20th century, particularly in the Knjaževac and Crna Trava municipalities. To be statistically precise, forest-land increased by 1.9 %, while agricultural land decreased by 0.4 % between 1996 and 2007 alone (Table 4-4).

Land abandonment goes together with a loss of economic functions of mountain areas. Thus grazing as a traditional activity is dying out in various parts of European mountain areas: in the Carpathians (Burdusel, Kanianska, Maryskevych, 2006; Hajducova, 2007; Rusztecka, 2007), in the Pyrenees (Collantes, Pinilla, 2004), Massif Central and the Alps (Andre, 1998). In contrast, areas with pastures and meadows have increased the most in Serbian mountain areas (Table 4-4). In an interview, an expert for rural development and policy explained the connection between this and the fact that grazing activity is less labour intensive than cropping, orchard - or grape-growing, particularly taking into account the labour age structure and emigration trend²⁸.

Table 4-4: SMA – Change in Forest- and Agricultural- Land, % (1996-2007)

Mountain Area	Forests	Agricultural Land			
		Total	Arable Land	Orchards and Vineyards	Meadows and Pastures
Dinaric Alps	+ 7.6	- 0.5	- 2.5	- 4.4	+ 1.7
Rhodopians	- 6.6	- 1.7	- 3.2	+ 17.3	- 3.0
Balkan Mountains	- 3.3	- 0.2	- 5.4	- 23.7	+ 9.9
Carpathians	+ 3.3	+ 2.1	- 5.4	- 6.8	+ 14.5
SMA	+ 1.9	- 0.4	- 3.8	- 4.3	+ 3.5

Source: based on SORS, 1997; SORS, 2008

However, there are also a few cases of dwellers who have undertaken certain actions. After realising that they are in possession of land regulated by a spatial plan, dwellers have decided to sell that land. The motive of selling is the higher price of land defined for tourism development. Bought by investors from the largest cities in Serbia or even foreign investors, land remains abandoned till the potential moment when the state will endow the areas with basic infrastructure and tourist facilities²⁹. This means that preparation for big investments in tourist resorts does not lead to enrichment of the local economy, but rather to intensified abandonment of land. Therefore, spatial planners and the government should first of all take into consideration how information is passed on to the local population and take measures to prevent land alienation as side effects.

A similar land abandonment trend is evident in all European mountain areas. A significant part of once used land turns into, as M.F. Andre (1998) calls it, “mediaeval wilderness”. The aspect in which Serbian mountain areas differentiate from other European mountain areas is that orchards and vineyards are more often abandoned than meadows and pastures. However, abandoned land all over the European massifs loses its value, not solely for agricultural development, but also for tourism because those areas turn to unattractive homogenised landscapes (Ibid.). This way, the economic function and resources of the areas are being neglected and economically degraded.

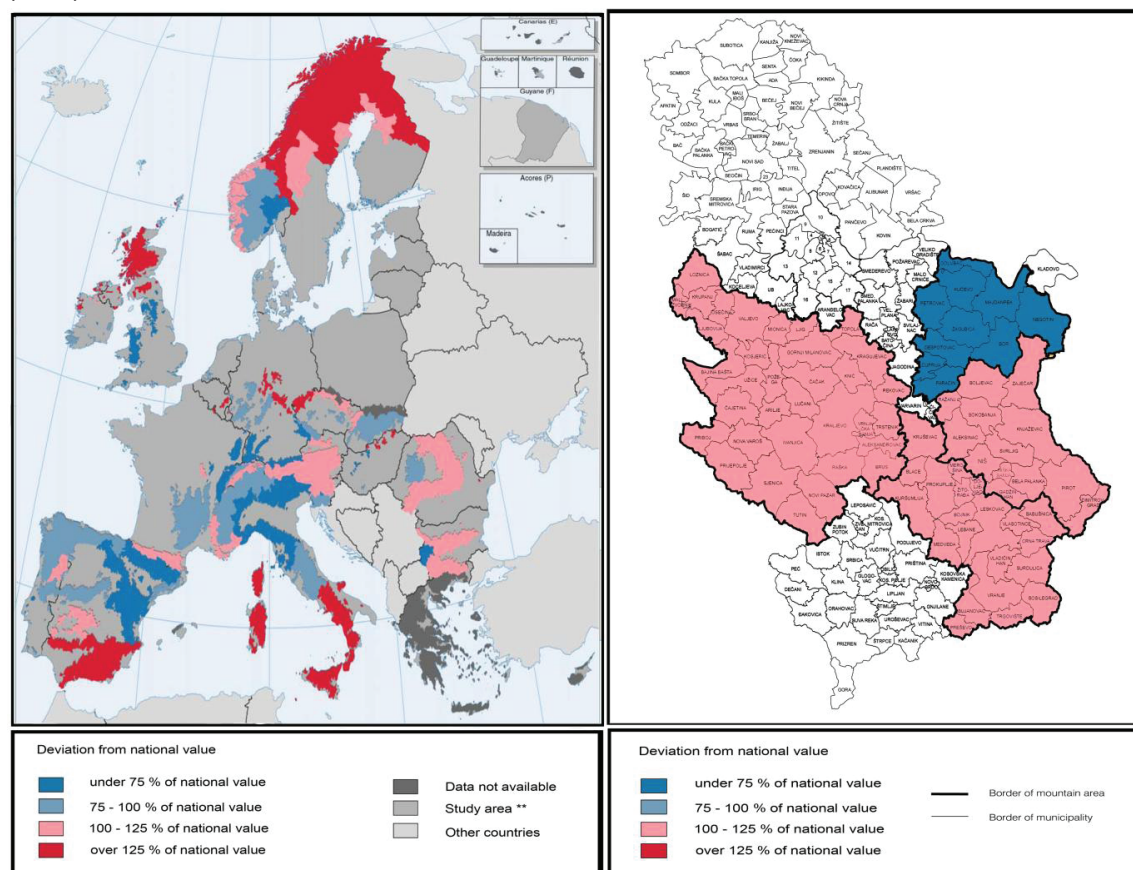
²⁸ Based on an interview with a Professor at the Faculty of Agriculture – University of Belgrade, Chair for Agrarian Economics and Market. Research fields: Agrarian economics; agrarian policy and agricultural support; role of agriculture in international processes of integration; structural changes in agriculture; rural development policy; rural economics and the rural labor market; and rural poverty and social inclusion (conducted in June 2009).

²⁹ According to an interview with a private stakeholder in Crni Vrh – Knjaževac municipality (conducted in September 2009).

4.3.4 Unemployment – a Call for Changes

When the percentage of unemployment per mountain massif of each European mountain country is compared to their national average, we get a composite picture (Map 4-7) where almost every country has both mountain ranges above and mountain ranges below the national average. This also includes the case of Serbia where the Carpathians are significantly better rated than Dinaric Alps, Rhodopians and Balkan Mountains (Ibid.).

Map 4-7: EMA and SMA – Proportion of Unemployment per Massif Compared with National Average (2001)



Source: EC, 2004; map of Serbia is elaborated by the author, based on SORS, 2004b

**Study area refers to area defined in EC final report (2004)

The unemployment rate was compared at a municipal level and between rural and urban parts of mountain areas in the SARD-M report (EURAC, 2008) and the Atlas of the Carpathian Macro-Region (EURAC, 2010), which included Carpathian countries and Balkan Peninsula countries. What was analysed there has shown that urban and rural differences appear again as is the case with other indicators presented so far. For example, 50.7 % of the active rural population is unemployed in the Czech Carpathians in comparison to 47.9 % of the urban population (Hajducova, 2007). Unemployment in rural areas is characteristically long-term, shown in the example of Bulgaria: 11.3 % are unemployed in rural and 3.6 % in urban areas (Mileva, 2008). Unfortunately, statistics for the Republic of Serbia do not measure employment and unemployment in rural and urban areas separately, therefore, it is not possible to show the

quantities particularly for Serbian mountain areas. What can be applied here are the results measured and published for the needs of the Poverty Reduction Strategy of the Republic of Serbia (GRS, 2003b) and the Analysis of Characteristics of Poverty in Serbia (GRS, 2009b). Expressed throughout a complex set of indicators (insufficient income for living, lack of employment opportunities, inadequate housing conditions, inadequate accessibility to social, education and health services, inadequate communal endowment, unrealised rights to healthy environment), based on the results of a Living Standard Measurement Survey (2007), it was concluded that poverty is a prevalingly rural phenomenon with 9.8 % of the population being poor in comparison to 4.4 % in urban areas (GRS, 2007). The poorest rural population in Serbia was the population in south-eastern Serbia (18.7 %) in 2007 (GRS, 2007), which comprises the southern part of the Rhodopian mountain area. A study on Small Rural Households and the Rural Non-Agricultural Economy also stated that there were conditions of extreme poverty in Serbian mountain areas (Bogdanov, 2007).

Some of the causes of higher unemployment in rural areas are stated in the National Report for Bulgaria (SARD-M). It is noted there that an inadequate quality of education and a high illiteracy rate, particularly in rural areas, contribute to the situation (Mileva, 2008). The illiteracy rate is twice as high in rural than urban settlements, almost 50 % of rural inhabitants are without secondary education (20 % in urban centres) and 5.5 % have a university education (in urban areas 20 %) according to M. Mileva (Ibid.). In addition, very few job opportunities are considered as a crucial reason for underemployment in rural areas, indicated by the same study (Burdusel, Kanianska, Maryskevych, 2006; Mileva, 2008), but also strongly supported by interviews with the local population in Serbian mountain areas.

Once more, there are strong similarities between all European mountain areas regarding comparison between urban and rural areas. This time it is with regard to the unemployment rate. Not all the mountain areas in European mountain countries have the same level of unemployment, which is another similarity between those countries. This indicates that potential mountain policy and measures need to be regionally and even locally adapted, particularly with regard to literacy, education and job opportunity improvement, which are listed as the main causes of the problem.

4.3.5 Under-Average Incomes – a Constraint to Attractiveness and Development

Monthly income per capita in Serbian mountain areas is less than half of the GDP at a national level, which is 109 Euro (Table 4-5). It is the highest in the Balkan Mountains (49 Euro), further followed by the Dinaric Alps (43 Euro), the Carpathians (40 Euro) and finally the Rhodopians (34 Euro) (based on SORS, 2009a). Compared to the national average, it is indicative of how unattractive mountain areas can be for living in Serbia. Another example within European mountain areas is the Norwegian mountain municipality of Engerdal that has had a slightly smaller increase in GDP per capita than the national level (29 %: 33 %) even though the average income was 29 % below the value of the national level during the 1990s (Sandlund et al., 2004).

Table 4-5: SMA – Monthly Incomes per Capita and per Employee for Different Economic Sectors, EURO and % (2008)*

Mountain Area	Total			Primary		Secondary		Tertiary	
	Per Capita	Per Employee	%	Per Employee	%	Per Employee	%	Per Employee	%
Dinaric Alps	43	267	100	206	1.9	236	41.8	298	56.3
Rhodopians	34	249	100	148	1.7	208	36.0	288	62.3
Balkan Mountains	49	260	100	166	1.4	213	33.1	296	65.5
Carpathians	40	283	100	236	2.3	305	47.5	268	50.2
SMA	42	263	100	188	1.8	232	39.2	293	59.0
Serbia	109	409	100	332	3.6	360	33.8	436	62.6

Source: based on SORS, 2009a

* 1 EUR was approximately 80 RSD in 2007 (<http://gkojadinovic.blog.rs/gallery/3555/kurs-dinara-prema-evru-2007-2010.gif>)

Moreover, disparities between rural and urban settlements again appear as an indicative matter in most European mountain areas. The situation is that rural areas have a lower income, but there are still certain differences between EU15 countries and other countries in Europe. Namely, EU15 had a greater GDP increase in rural than in urban areas, while other European countries had a greater increase in urban areas between 2000 and 2006 (Gakova, Dijkstra, 2010). In the SARD – M reports and other sources it is stated that there are considerable income differences between urban and rural areas in the Carpathians (Burdusel, Kanianska, Maryskevych, 2006; EURAC, 2008). In addition, other sources noticed small incomes in agriculture (Burdusel, Kanianska, Maryskevych, 2006) and the rural population threatened by poverty (Adelboden Declaration on Sustainable Agriculture and Rural Development in Mountain Regions, 2002). An example is Bulgaria, where a World Bank study showed that the poverty rate is four times higher in its villages than in its towns/cities (BFSD, 2008). Statistics in Serbia do not measure income related indicators per settlement, but per municipality. Therefore, precise values of GDP cannot be shown, but the average income in primary activities (agriculture and fishery) in comparison to secondary and tertiary activities can still be analysed. Table 4-5 actually shows the great importance of the tertiary sector in Serbian mountain areas, comprising even 59 % of overall incomes, while the primary sector comprises only 1.8 % (based on SORS, 2009a).

Due to their traditional value and identity, agriculture and forestry are both important parts of the economy in European mountain areas (EC, 2004), also including mountain villages in Serbian mountain areas (Dželebdžić, Jokić, 2003). This is because activity diversification in villages is still undeveloped (according to interviews with local residents) due to the industrialisation policy after the Second World War in which rural areas were neglected³⁰.

³⁰ Based on an interview with a Professor at the Faculty of Agriculture – University of Belgrade, Chair for Agrarian Economics and Market. Research fields: Agrarian economics; agrarian policy and agricultural support; role of agriculture in international processes of integration; structural changes in agriculture; policy of rural development; rural economics and rural labor market; and rural poverty and social inclusion (conducted in June 2009).

However, employment in other sectors is higher than in the primary sector (EC, 2004) but it is still practised in terms of pluriactivity: an individual is officially employed in the secondary (e.g. industrial) or tertiary sector (e.g. administration), while agriculture and forestry are practised in their free time (EC, 2004). If the significance of economic activities and sectors is measured by income per employee, the situation in Serbian mountain areas is rather different than in the Alps. Namely, tourism is the most important (profitable) activity there (Mountain Partnership, 2008; EC, 2000), while Serbian mountain areas have the lowest income per capita (Table 4-6). Also, the role of agriculture is different in the Alps and other European mountain areas. In the previous mountain areas it is predominantly commercial (Mountain Partnership, 2008) and closely related to tourism, thus also playing an essential role in the economy (European Commission [EC], 2000).

Table 4-6: SMA – Distribution of Income per Employee in Chosen Activities, EURO (2008)*

Mountain Area	Agriculture	Mining	Industry	Tourism	Financial Transactions
Dinaric Alps	209,00	268,00	210,00	200,00	533,00
Rhodopians	148,00	179,00	194,00	128,00	488,00
Balkan Mountains	167,00	347,00	191,00	126,00	478,00
Carpathians	238,00	397,00	272,00	103,00	504,00
SMA	190,00	335,00	207,00	160,00	508,00

Source: based on SORS, 2009a

* 1 EUR was approximately 80 RSD in 2007 (<http://gkojadinovic.blog.rs/gallery/3555/kurs-dinara-prema-evru-2007-2010.gif>)

On the other hand, the Spanish Pyrenees have lost their role in commercial production (Pardini, Gispert, Dunjo, 2004), similarly to Carpathian countries such as Poland (Rusztecka, 2007), Czech Republic (Hajduchova, 2007), Slovakia, Ukraine and Romania (Burdusel, Kanianska, Maryskevych, 2006), as well as in Serbia³¹. The activity that appears as significant in Serbian mountain areas is financial transactions³², as this field has the highest earnings per employee in 2008, which is 35 % higher than second ranked mining (Table 4-6) (based on SORS, 2009a).

Up to this stage of the analysis, the difference between European mountain areas appears to be the most significant with regard to GDP income and the role of economic activities behind it. In comparison with other activities, agriculture brings less profit, particularly in the Spanish Pyrenees (San Miguel, Perez-Carralv and Roig, 1999) and in Eastern Europe where farmers work with inadequate mechanisation (EC, 2004). This makes those mountain areas unattractive for working and consequently for living, simultaneously damaging their development possibilities. In contrast, there has been more effort put into the improvement of urban and rural relations in the Alpine countries and Scandinavian mountain areas, which has provided a more balanced territorial distribution of capital (Gakova, Dijkstra, 2010). In those areas, activities in rural areas

³¹ According to the interview with the expert for rural development and policy (conducted in June 2009).

³² Statistics in the Republic of Serbia differentiate the following 15 economic activity fields: agriculture, forestry and water-management; fishery; mining (ore and stone extraction); industry (processing industry); electricity, gas and water production; civil engineering; trade; tourism (hotels and restaurants); traffic and communications; financial transactions; real-estate business and renting; government and social insurance; education; health-care and social work; and other communal, state and personal services.

are more diversified, interrelated and commercialised; therefore being more successful in making profit than in Serbia.

4.3.6 Product Market – Lack of Competitiveness of Products and Accessibility to Markets

One of the reasons why incomes are dependent on location is the market. As the location of production is a greater distance from the bigger markets (in large cities), income decreases because of higher transport costs (Collantes, Pinilla, 2004; Sandlund et al., 2004) or lower prices on the local market (Burdusel, Kanianska, Maryskevych, 2006). The problem is essentially based on the existence and quality of the infrastructural connectivity of mountain areas with other areas, thus it can be estimated that mountain massifs with the best accessibility are in the best position. Therefore, even though the placing of products and maximisation of profit are a problem stated for all remote mountain areas (in Serbia (Dželebdžić, Jokić, 2003), Norway (Sandlund et al., 2004), Alps (Mountain Agenda, 2001; EURAC, 2009), Spain (Collantes, Pinilla, 2004; International Environment Forum [IEF], 2008) and South-Eastern European countries (EEA, 1999)), the best infrastructural quality and density in Central European countries diminishes the extent of the problem.

The competitiveness of agricultural products is additionally lowered since they require more physically intensive work and result in smaller incomes than for any other economic sector. A low quality of road infrastructure also makes them less competitive (Dželebdžić, Jokić, 2003). When the distance from the regional and capital city, road density and road quality are taken as the indicators for good connectivity to the market, the Dinaric Alps have the best connectivity among Serbian mountain areas. This is due to their higher road density than in other Serbian mountain areas. In the case of the Balkan Mountains in Serbia, accessibility to Belgrade's market is rather good because of the motorway connection, but the low density of the local road network makes villages rather isolated from local and national markets.

In the rural areas of the Carpathians (Mihai, Savulescu, Sandric, 2007) and Balkan countries (Balkan Foundation for Sustainable Development [BFSD], 2008), agriculture is mainly based on small-scale family farming, which is completely self-sufficient or with an insignificant amount of products placed on the market (Burdusel, Kanianska, Maryskevych, 2006; Hajduchova, 2007; BFSD, 2008). Therefore, the agricultural activity is not important in terms of profit, but of food supply for individual households. Interviews with local residents and experts in Serbia indicated the same: production is prevailingly subsistent and products are used for the needs of the producing family, not for commercial purposes. A study on small rural households and the non-agricultural economy (Bogdanov, 2007) also showed that low productivity does not provide surpluses for the market in Serbian mountain areas and that the sale of agricultural products does not seem important for inhabitants in rural areas.

Besides accessibility, there is another difficulty for European mountain areas – competitiveness. Even though tourism is the most prosperous activity in the Alps (EC, 2000), some studies (e.g. in the Bavarian Alps) have shown that tourism has positive development only in big centres of international reputation (EC, 2004), which makes the Alpine countries unsatisfied with their competitiveness (EC, 2000). Another example – the mountain municipality of Engerdal in

Norway – shows that its great dependency on small-scale industrial production of resources (fish) makes it less competitive in contrast to less isolated locations, so that the benefits hardly exceed investments and higher transport costs (Sandlund, et al., 2004).

4.3.7 Low Profiled Labour Market and Labour Competence – Aged Population Hinders Innovativeness and Adoption of Contemporary Knowledge

Besides the product-market, there is also the problem of the labour-market in Serbian mountain areas. Most of the population and labour is concentrated in urban areas (EC, 2004) due to emigration from villages, thus contributing to the lack of a work-force in agriculture, as is the case in France (Massif Central) (Andre, 1998), Norway (Sandlund et al., 2004), the Carpathians (EURAC, 2009), Bulgaria (BFSD, 2008) and Spain (Collantes, Pinilla, 2004), as well as in Serbia³³.

Table 4-7: SMA – Average Demographic Age (2002)

Mountain Area	Average Demographic Age		
	Total	Urban	Rural
Dinaric Alps	40.3	35.7	42.1
Rhodopians	40.7	36.5	42.8
Balkan Mountains	44.9	39.6	48.8
Carpathians	42.5	39.0	44.6
SMA	41.5	37.6	43.7

Source: based on SORS, 2003a

The labour force reaches an inadequate age structure in emigration areas because emigrants are predominantly young people looking for better job opportunities in cities (Euromontana, 2003)³⁴. Thus, the average demographic age in all Serbian mountain areas is above 40 (Table 4-7), which means that the demographic age is very old (SORS, 2003a). In addition, difference between demographic age in urban and rural areas is significant – in urban centres it is 37.6 while in villages it exceeds 43.7 (Table 4-7).

The age structure of the work-force leads toward an illiteracy problem, particularly in rural areas, because older generations are often illiterate or only basically educated on the one hand and because they are at an age when learning and adapting to new knowledge is not optimal on the other. Therefore, it weakens the educational structure of the labour force in European mountain areas, specifically stressed in the case of Serbia (based on SORS, 2003b), Czech Republic (Hajducova, 2007), Romania (Burdusel, Kanianska, Maryskevych, 2006; EURAC, 2008) and Bulgaria (BFSD, 2008). If Bulgaria is taken as an example, figures show that the illiteracy rate in rural mountain municipalities is twice as high as in urban areas, almost 50 % of the population does not have secondary education (in comparison to 20 % in urban areas) and only 5.5 % of the rural population has higher education (in comparison to 20.6 % in urban mountain

³³ According to an interview with an expert for rural development and policy and interviews with local population (conducted in September 2009).

³⁴ In the case of Serbian mountain areas this was again confirmed by the expert for rural development and policy and local population.

areas) (BFSD, 2008). Compared to Bulgaria, the same indicators show that the situation is similar in Serbian mountain areas. Illiteracy is found in 7.8 % of the population aged 15 and above (based on SORS, 2003b). As shown in Table 4-8, illiteracy is almost three times higher in rural than in urban settlements; with regard to secondary education, the difference between rural and urban is still significant, although smaller; and finally the biggest differentiation is when the percentage of 15+ population is compared to the population with higher education. The Balkan Mountains and Dinaric Alps are two Serbian mountain areas where the percentage of the population with higher education is higher than in other areas, possibly related to the fact that there are two of the largest regional centres and universities in Niš and Kragujevac.

Table 4-8: SMA – Illiteracy and Education Structure of Population, % (2002)

Mountain Area	Illiteracy			Secondary School			University		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Dinaric Alps	7.2	3.6	10.5	39.9	51.5	28.7	8.2	13.5	3.7
Rhodopians	10.8	5.3	14.7	32.4	44.4	25.3	7.2	13.5	3.1
Balkan Mountains	5.5	3.3	8.5	37.1	48.8	29.3	10.8	16.3	3.3
Carpathians	8.1	4.4	10.8	30.2	45.2	19.3	6.3	12.1	2.2
SMA	7.8	4.0	11.4	36.5	48.8	26.8	8.3	14.0	3.3

Source: based on SORS, 2003b

Innovation and motivation in further investments are dependent on age and education level. Besides examples in Serbia and other Balkan and Carpathian mountain areas, the problem of competitiveness of the labour force appears also in Spain. As analysed, the chances that senior farmers in Andalusia (Spain) would introduce innovations in their practice are very low (Moscoso, 2006). In interviews, the population of mountain areas in Andalusia has come out with the low level of training and problems in communication flow (Ibid.), which is also the case highlighted by the interviewed population in Serbian mountain areas. In Romania, there is also the problem of lack of interest and motivation of both old and young farmers to be trained and work on improvements in agricultural development (Burdusel, Kanianska, Maryskevych, 2006). The older population is not motivated because of their age and the younger population because they are targeting jobs in occupations other than agriculture (Ibid.). According to interviews, local residents in Serbian mountain villages have pointed out that road infrastructure and more diverse job opportunities are the necessary conditions for the young generation to stay or return to the rural areas. Because those conditions are not fulfilled, Serbian mountain areas have the problem of innovation and lack of enthusiasm for investments.

The literature analysed indicates that the problem of low-profiled labour and their low competitiveness is particularly indicated in the Carpathians, Balkan Mountain Massif and the Andalusian Mountains in Spain. As with many cases before, the problem appears more intense in rural areas than urban areas. Emigration has intensely influenced the work-force in rural areas: firstly by lowering the overall number of workers and secondly by increasing the age of the population structure. Further, an older work-force can carry out only physically undemanding work, and being illiterate or poorly educated, the older population has a diminished possibility for the innovation and adaptation of contemporary knowledge. Without

change that will come from the local population, change from outside cannot bring results. Therefore, improvements in income, connectivity to the market, costs of production and job opportunities need to be stimulated by measures on information dissemination – both formally by education and informally through the media, info centres and contemporary means of communication.

4.4 Accessibility and Infrastructure

Isolation, lack of transport infrastructure, communication means and scarcity of social events are often taken as synonyms for mountain areas. Even though it is often the case, Alpine ski centres, such as Davos, Chamonix and Garmisch-Partenkirchen, are very well known as having an infrastructure which enables the reception of a large number of visitors from outside of the region. Therefore, this section further analyses problems and their consequences regarding accessibility and infrastructure in Serbian and other European mountain areas.

In the course of understanding the term “accessibility”, here is the definition used in this dissertation: accessibility is taken as the travel time to a location where people can realise their needs or realise activities and services (grocery store, school, university, cinema, theatre, working place, etc.). Additionally, the term “not accessible” is to indicate that a certain service is not provided for potential users in their place of living – village or town. In general, a relevant factor in estimating accessibility is travel costs; nevertheless, due to the lack of data it is not taken in account in this research.

The other term to be defined here is “infrastructure”. It is adequate to point out that for purposes of this dissertation “infrastructure” embraces both technical and social infrastructure. Technical infrastructure comprises equipment, linear supply structures (e.g. electricity, water, sewage, telephone cables supply). On the other hand, social infrastructure comprises objects (buildings) that enable gathering of people with a particular purpose (e.g. schools assigned for education, houses of culture or restaurants for socialising in one’s free time).

4.4.1 Technical Infrastructure

Serbia has no standards for minimal infrastructural endowment, therefore the technical infrastructure suffers many spatial disparities and some settlements are missing such basic communal services as water supply, sewage, organisation of waste disposal, etc. (Malobabić, Maričić, 2004). Since a definition of the term “technical infrastructure” is given in the previous introduction, here it should be pointed out that the following discussion is divided into (1) transportation infrastructure (roads and railways) and their accessibility and (2) installations for apartments (water and sewage, electricity, communication services and waste management).

4.4.1.1 Low Accessibility, Quality and Maintenance of Roads – Reduced Mobility of Population and Products

Difficult orography makes the costs of construction and maintenance higher (Mountain Agenda, 2001) and both floods and avalanches cause additional losses (Gurung et al., 2009). Even when the road infrastructure is in place, temporary disruptions of traffic caused by avalanches, storms, snow drifts, etc. sometimes appear as a considerable and costly problem. Nevertheless,

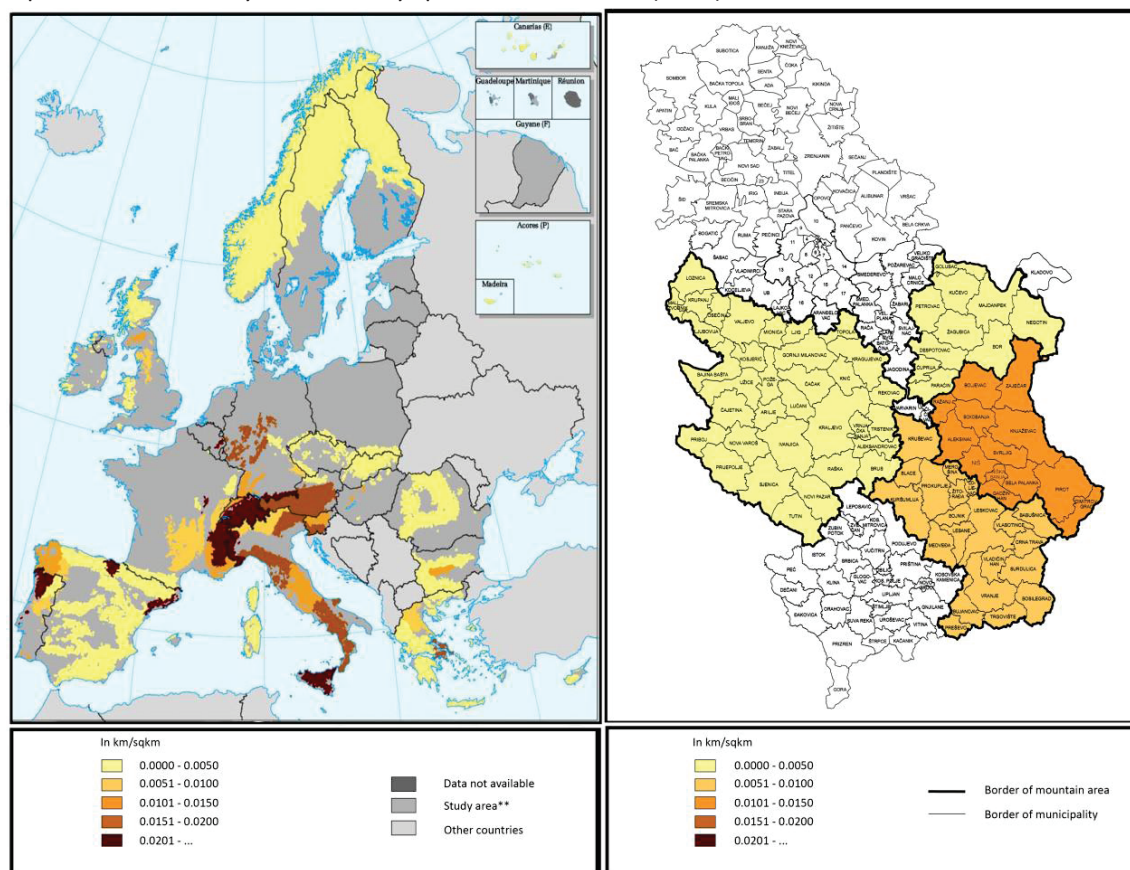
road infrastructure plays the most important role with regard to both time and costs of transportation (Ayuda, Panilla, 2003; Collantes, Panilla, 2004).

High density of motorways indicates the highest level of accessibility due to their characteristics³⁵. As shown on Map 4-8, the density of motorways in European mountain areas is rather diverse. The Alps have the densest network, in contrast to the Scandinavian mountains, Carpathians and other Balkan mountains, except in the Athens region, which have lowest density of motorway network (EC, 2004). This is expected because, as Z. Gakova and L. Dijkstra (2010) state, quantity and quality of the local road network, in most cases, is better as the country is economically more developed (Gakova, Dijkstra, 2010). The overall length of motorways through Serbian mountain areas is about 198 km. Thus, motorway density in is 0.0044 km/km², which associates them with the group of sparsest motorway densities in the European mountain areas (Map 4-8). The motorway passes only throughout seven municipalities out of 78 (Government of Republic of Serbia [GRS], 2003a). In contrast to this situation, the local population in Serbian mountain areas who were interviewed listed endowment of road infrastructure as their primary need next to job-opportunities. In addition, they believe that those conditions are enough to bring the young population back to the rural areas.

Comparing European mountain countries with regard to density of their regional road network, differences emerge within mountain massifs. Thus the density of the road network in the Carpathians is unequal: it is considerably higher in Czech Republic, Poland and Slovakia than in Serbia, Romania, and Ukraine (European Academy of Bolzano [EURAC], 2008). Similarly, the Pyrenees and Iberian Cordillera, both in Aragon in Spain, have developed unequally.

³⁵ A motorway is defined as a main road for fast-moving traffic, having limited access, separate carriageways for vehicles travelling in opposite directions, and usually in total four or six lanes.

Map 4-8: EMA - Density of Motorways per Massif, km/km² (2004)



Source: EC, 2004; map of Serbia is elaborated by the author, based on data provided from the Ćuprija Municipality - Department for Urbanism of Paraćin Municipality (2010), RASP (2010) and City of Niš – Department for Communal Services, Energy and Traffic³⁶.

** Study area refers to the area defined in EC final report (2004)

Besides the issue of network density and quality, there is a problem of additional infrastructure such as gas stations, parking places for breaks, motels and markets (Malobabić, Krunić, 2004). Those problems additionally indicate that neglected maintenance, similar to Bulgaria, Macedonia and Albania, also exists in Serbian mountain areas and that most of the mountain areas face difficulties with regard to road infrastructure.

Local connectivity in Czech Republic (Hajduchova, 2007), Romania (Burdusel, Kanianska, Maryskevych, 2006), Bulgaria (Ginovska, 2007) and Macedonia (Mileva, 2008) is estimated to be satisfactory in terms of network development but in very bad condition in terms of quality and maintenance. In Albania, even the road network is not properly developed, followed by neglected maintenance (Skreli, 2007). This means that the presence of roads does not show the

³⁶ Information about the length of motorway in the municipalities of Ražanj, Aleksinac, Doljevac and Leskovac was provided by E-mail exchange with the Director of the Republic Agency for Spatial Planning of Republic of Serbia (April 2010); information about the length of motorway in the City of Niš was provided by telephone contact with an expert assistant in the Niš Department for Communal Services, Energy and Traffic (April 2010); the information on the length of motorway in the Paraćin and Ćuprija municipalities was provided by contacting the Municipalities of Paraćin and Ćuprija via telephone (contact was realised in April 2010).

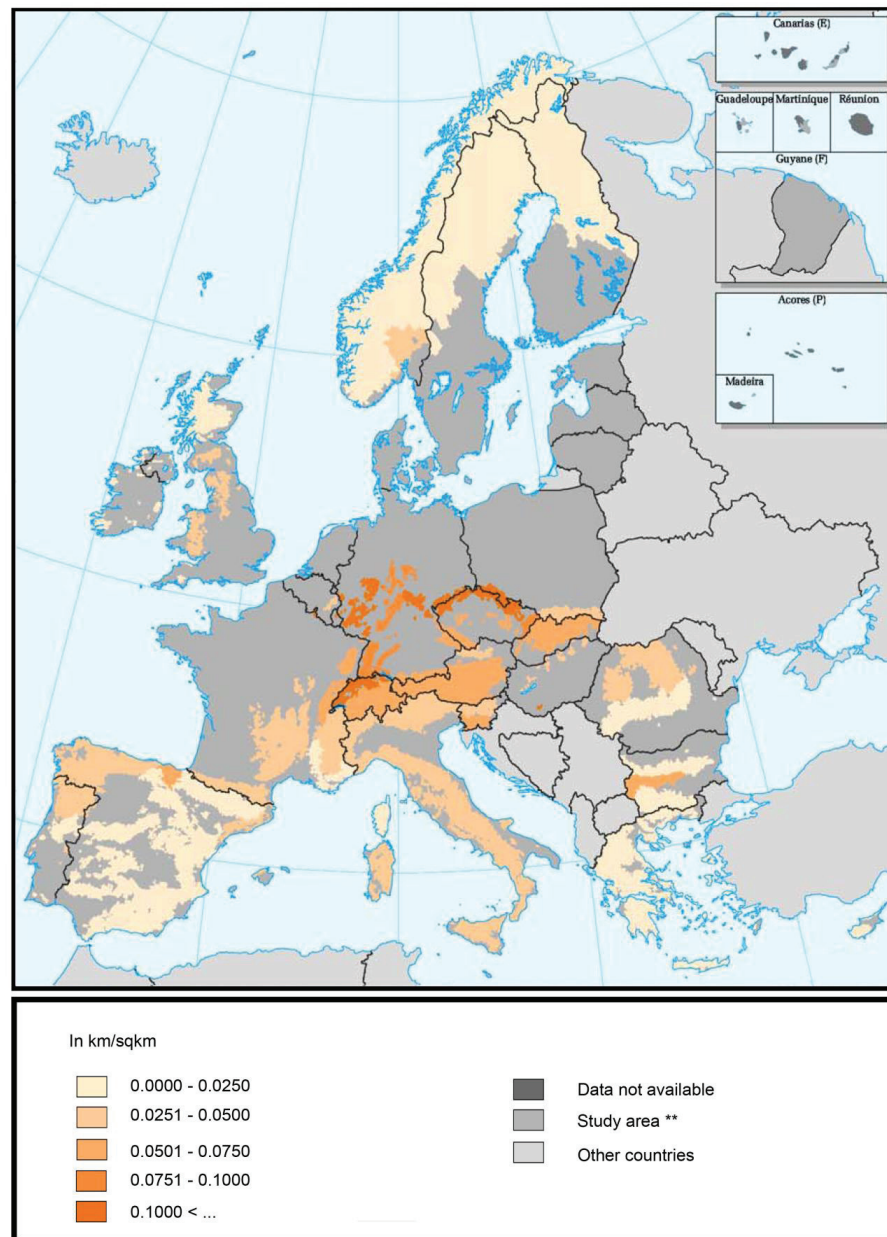
possible quality of roads. Discrepancies between existing infrastructure and its maintenance are the greatest in Balkan countries (BFSD, 2008), followed by Czech Republic (Hajduchova, 2007) in the Carpathians and Spain in the Pyrenees, while Austria, Italy, Slovenia, Switzerland and Germany in the Alps strive for further improvements (EC, 2000) and their road network has been increasing constantly within the past decades (PSAC, 2007).

Differences with regard to road infrastructure in European mountain areas appear to be significant. In contrast to the Alps and some smaller parts of other mountain massifs in Europe, all other mountain areas have difficulties with the low density of their road network. Particular difficulties are stated in the case of the Balkan Mountain Massif where next to the low network density, the mountain population suffers from low road quality, insufficient maintenance and incomplete road facilities. Therefore, the only population mobility in the mountain areas is one way flow – emigration from those areas. As the population remaining in mountain areas considers the endowment of road infrastructure as one of its primary needs, overcoming this problem should be one of the leading considerations in the creation of national mountain policies.

4.4.1.2 Low Accessibility and Quality of Railways – Dilemma between Construction Costs and Benefits to Environmental Protection

The Alpine strategy (EC, 2000) and SARD national reports (Ginovska, 2007; Mileva, 2008; Burdusel, Kanianska, Maryskevych, 2006; Hajduchova, 2007; Skreli 2007) state the need for more developed railways. On the one hand, the Alpine road network has been spreading and developing, on the other hand, the railway network has hardly developed from its state at the beginning of the 20th century (PSAC, 2007). The least investments went to light railway development, which influenced their weak promotion and finally some lines were shut down due to decreased demand (PSAC, 2007). The pattern of connectivity via railways is similar to other kinds of accessibility: Central European mountain areas have the densest railway network, while Scandinavian, Balkan, South Carpathian and most of the Spanish mountain areas have the sparsest network (Map 4-9 and Map 4-10). On the one hand, Switzerland and Austria feature the highest density of railways per inhabitant and in the whole of the Alps (excluding Western Italy and Southern Austria) with a density higher than the European average (PSAC, 2007); while on the other hand, in Serbia hardly more than half of the mountain municipalities (43 municipalities) have a railway and in only half of those municipalities the railway is electrified (Map 4-10). Additionally, Serbian railways are lagging behind in their speed because in more than half of the railways in Serbia, the official speed is 60 km/h (Serbian Railways, 2006). This has resulted in its low importance in commuting at a national level.

Map 4-9: EMA - Density of Railways per Massif, km/km² (2002)

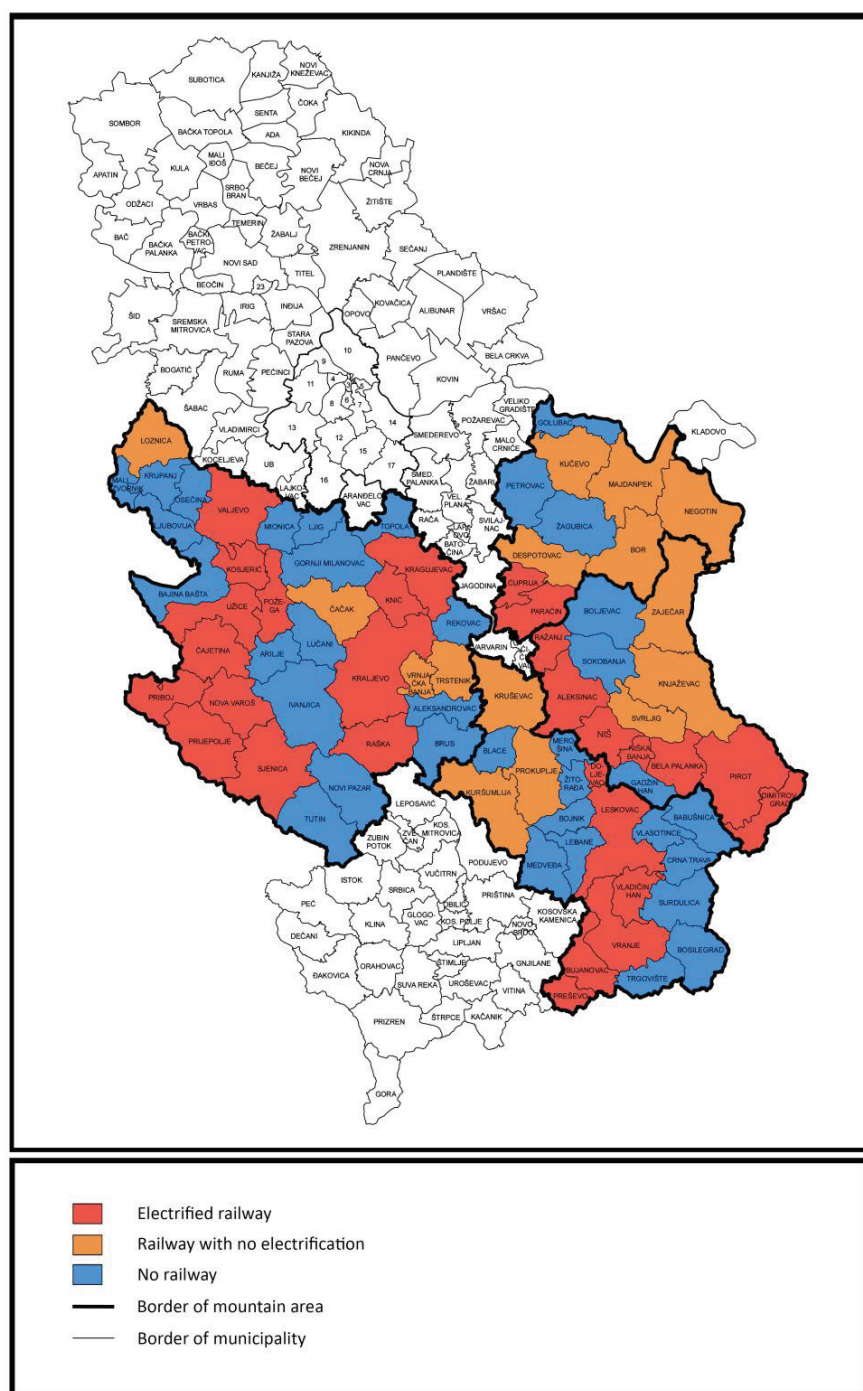


Source: EC, 2004

** Study area refers to area defined in EC final report (2004)

The only mountain area in the Europe that has significantly developed its railway network is the Alps. The Alpine countries plan to develop the railways further due to their positive environmental effect when compared to road infrastructure and freight traffic. On the other hand, there is Serbia, where investment in achieving Alpine railway density and quality is too costly with regard to its still undeveloped road infrastructure. For this reason and for the interviewed local population that recognised no practical significance of the existing railway, considerations for the improvement of Serbia in this matter can be postponed for later development phases.

Map 4-10: SMA – Railway Quality per Municipality (2006)



Source: map is elaborated by the author, based on IAUS, 1996

4.4.1.3 Lack of Water and Sewage Supply – Impaired Life Quality and Threat to the Environment

There are differences in water and sewage supply at a regional level and between massifs. The situation in other Balkan countries is unsatisfactory: in FYRO Macedonia (Ginovska, 2007), Bulgaria (Mileva, 2008) and Serbia. In Serbia, only five municipalities in mountain areas (Kragujevac, Mionica, Brus, Vrnjačka Banja in the Dinaric Alps and Golubac in the Carpathians)

have more than 90 % of households connected to the water-supply system (based on SORS, 2009a). More than 80 % of the mountain population in Czech Republic is supplied by a public water system (Hajduchova, 2007) while in the Albanian mountains, the population still faces severe problems regarding public water endowment (Skreli 2007).

These estimations on the water-supply and sewage system for Serbian mountain areas have shown that endowment of infrastructure decreases with distance from the cities, making its standard very low in urban hinterlands, based on elaborate water-supply development for the time-period 1971-2002 (Malobabić, Maričić, 2004). The Carpathians and the Balkan Mountains record general differences between municipal centres and villages, as stated in the SARD –M reports (Burdusel, Kanianska, Maryskevych, 2006; BFSD, 2008). The share of the population supplied with a sewage system in rural areas ranges from 26.1 % in Czech Republic (Hajduchova, 2007) and 17.7 % in FYRO Macedonia (Ginovska, 2007), to statements regarding the highly unsatisfactory situation in Albania (Skreli 2007). In all of the Serbian mountain areas, there is no municipality with connections to the sewage system above 90 % of the households (based on SORS, 2009a); three whole municipalities have less than 20 % of households with a water-supply (Merošina, Crna Trava and Bojnik – each in the Rhodopians); and four municipalities have no sewage connections to households (Osečina in the Dinaric Alps; Žagubica and Boljevac in the Carpathians; and Trgovište in the Rhodopians) (Ibid.). On average, 55.6 % of households in Serbian mountain areas are connected to a water-supply system and only 36 % to sewage (Ibid.). This indicates the problem of a very poor level of basic communal equipment of households.

Records show that the Carpathian and Balkan Mountain Countries have problems with insufficient water and sewage infrastructure, particularly in rural areas. The other group of countries, to which Serbia belongs, have the highest extent of unequipped households. In Serbian mountain areas there are even households with no infrastructure whatsoever (e.g. 1.9 % in the Serbian Carpathians) (based on SORS, 2004d). In addition, discrepancies between water-supply and sewage-supply coverage lead to another problem: the increased use of water is not properly followed with organised disposal of used water, thus threatening the environment; and it is a development constraint for all Serbian mountain areas because neither tourism nor industry can be developed without this infrastructure.

4.4.1.4 Lack of Electricity Coverage – Threat to Basic Needs of a Contemporary Society and to Economic Development

The fact that not many sources of literature mention this topic can be understood as there being no difficulties on this issue. However, there are 1.3 % of apartments in Serbian mountain areas with no electricity supply (based on SORS, 2004e). Again, electrification to villages comes later than in urban centres (Malobabić, Maričić, 2004) and there are 2.2 % of apartments with no electricity connection in villages, which is about 0.3 % in the cities (based on SORS, 2004e). Regarding electricity supply, the situation is worst rated in Albania where the population has to deal with incomplete supply coverage, poor distribution quality and often cut-outs of the electricity supply (Skreli 2007).

Comparing different massifs in Serbian mountain areas, there is a small difference in the level of electrification. Between the best rated Dinaric Alps (99 %) and lowest rated Carpathians (98.1 %) the difference in percentage of apartments with electricity endowment is less than one percent (based on SORS, 2004e). In the Balkan Mountains 98.6 % and in the Rhodopians 98.4 % of the apartments are electrified (based on SORS, 2004e). With regard to the urban and rural differences, the Serbian Carpathians again have the poorest endowment in both cities (99.5 %) and villages (97.1 %). Cities are best equipped in the Dinaric Alps (99.8 %), where villages also have the advantage in comparison to other Serbian mountain areas (98.3 %), and in the Balkan Mountains (99.8 %). In between there are the Rhodopians with a two percent difference: urban 99.6 % and rural 97.6 %.

In some parts of the Balkan Mountain Massif, electricity connections are still missing or lack reliability. Even though the endowment of electricity in Serbian mountain areas is better than with other infrastructure systems analysed so far, the situation still requires more work to be done in order to cover all households. Considering that some of those households might be shutting down due to the age of their householders, the situation should be proved in more detail; if so, further efforts should be put into quality improvement.

4.4.1.5 Low Quality of Communication Services – Hindered Knowledge and Information Flow

The problem described in written sources is the closure of post-offices in remote communities in the Italian Alps (Zucca, 2007) and insufficient post offices in Albania (Skreli 2007). It is hard to evaluate what the optimal number of users per post-office is, however, this analysis uses the EU 27 average (3,200 inh/post-office) (Eurostat, 2009) as an orientation value to estimate the situation in Serbian mountain areas. In that case, Serbian mountain areas exceed the defined value, reaching 4,835 inhabitants per post-office. Anyhow, the situation is not the same for each mountain area, because only the Carpathians are close to the optimal standard with 3,462 inhabitants per single post-office (based on SORS, 2009a). Nevertheless, statistics do not show distribution of the post-offices, nor their accessibility; therefore, a final estimation on endowment is not possible to give here.

The other problem with regard to communication services is old-fashioned telephone lines which are, according to J. Ross (2006) present in many mountain areas, including those in economically developed countries (Ross, 2006). In Serbian mountain areas 94 % of apartments had a telephone connection in 2007 (based on SORS, 2009a). As telephones are a basic means of communication, 6 % of households without telephone connections should be considered as a problem, particularly since computer equipment and the internet are still not in broader use. In the Serbian Carpathians and Rhodopians there are about 20% of apartments with no telephone connection: endowed are 83.3 % and 78.8 %³⁷. Again, another Balkan mountain country is noted as sharing the problem with Serbia: the Albanian mountain population faces the telephone connection problem, too (Skreli 2007).

³⁷ It should be taken in account that in 2007 a shift from analogue to digital switch was conducted, thus overlapping data on analogue and digital switches are included in the analysed indicators. Therefore, the results should be taken with caution.

One additional obstacle in the development of modern communications in European mountain areas is the lack of Internet supply. This is the case in Spain (Andalusian Mountains) (International Environment Forum [IEF], 2008) and transitional countries³⁸ in Eastern Europe (Ross, 2006). The observed situation in the field and conversations with the population in Serbian mountain areas confirmed this problem. Data indicate that only 30.5 % of households in Central Serbia³⁹ have an internet connection (SORS, 2009b). In contrast, 90 % of the territory is covered by high-speed internet in Czech Republic (Hajduchova, 2007).

According to interviews with local residents in Serbian mountain villages, the broadcasting and functioning of mobile-phone services also have difficulties, where the signal does not reach the area or reaches it very inconsistently due to the combined orography and insufficient number of relays for signal transmission. State institutions - centres for social work in municipalities Užice and Knjaževac⁴⁰ - argued that the direct spoken word between villagers is the most common way of communicating the services those institutions offer to their users. For that reason, specific attention and organisation in dissemination of information are required in order to achieve information flow from the source to the potential users.

It appears that the population of the Spanish mountains and Balkan Mountain Massif have the most defined problems with communication means in Europe, although even Alpine countries are dealing with the closure of post offices. Modern forms of communication are also considered important for business and education development and for keeping remote areas more connected; their equal distribution is one of the challenges that are faced. Another challenge is to systematically inform and educate the population to use them, thus preventing a situation similar to the rural areas of the Czech Carpathians where only 3.8 % of the inhabitants use connections to the internet (Hajduchova, 2007).

4.4.1.6 Lack of Waste Management – Threat to the Environment

Most of the city landfills in Serbia are temporary and do not fulfil organisational standards (Đorđević, 2000). In Serbian villages, the situation is even more alarming because there are no landfills except those spontaneously organised by inhabitants (Ibid.). Speaking explicitly about Serbian mountain areas, observation on the field trips conducted for this dissertation have shown a tendency of rural inhabitants to dispose their solid waste in streams and river beds. This overlaps with the result of the study conducted by the Trade Council of Denmark (TCD, 2008) that reports a large number of illegal and unregistered waste disposals in Serbia. The problems appear to be the same in Macedonian and Bulgarian mountain areas which have difficulties in solid waste management systems which are usually organised in urban centres

³⁸ Here transition refers to economic transition started in Eastern Europe at the beginning of the 1990s.

³⁹ Data on the municipal level are not available; therefore, Serbian mountain areas are equalized with Central Serbia here. Central Serbia consists of 22 additional municipalities to Serbian mountain areas. Since those additional municipalities are more developed, it could be expected that the percentage of households in SMA is even lower.

⁴⁰ According to the E-mail interviews conducted with Centers for Social Work in the municipalities of Užice (Psychologist of the Centre for Social Work, leader of the project *Help the Elders in Villages* in 2007), Kuršumlija (Director of the Center for Social Work) and Knjaževac (Sociologist in the Centre for Social Work) (conducted in November 2009).

and are hindered by the absence of awareness and knowledge on treatment practices and waste minimisation (Ginovska, 2007; Mileva, 2008; TCD, 2008).

Serbia, with an estimated 290 kg of annual solid waste per capita (TCD, 2008), and other Carpathian countries such as Romania, Czech Republic, Slovakia and Poland, with less than 400 kg were smaller waste producers in 2007 than Belgium, Portugal, Bulgaria, Hungary Greece and Slovenia (between 400-500 kg), Austria, Spain, United Kingdom, Germany, Italy, France, Sweden and Finland (between 500 and 600 kg) and certainly smaller than Ireland and Cyprus with more the 750 kg of annual municipal waste per inhabitant (Eurostat Press Office [EPO], 2009a). Nevertheless, European Union member countries seem to have developed a control system even at an international level. Thus some countries (e.g. France, Greece, Italy and UK) have been taken to court by the European Commission because of unsatisfactory waste-water management in urban centres (EPO, 2008a; 2008b, 2009b and 2009c). In contrast to mountain countries belonging to the European Union, the Balkan countries – Montenegro (European Investment Bank [EIB], 2009), Bosnia and Herzegovina, Croatia, Albania (TCD, 2008) and Macedonia (Ginovska, 2007) - are at the beginning in developing a proper system for waste management.

In contrast to the countries of the Balkan Mountain Massif, where the waste disposal problem occurs in cities and villages, Alpine countries deal with the problem in the context of waste disposal outside of their settlements caused by tourists in mountain refuges (Lebersorger, 2011). Even though the problem has different aspects here, the challenge is the same as in Serbia and other Balkan mountain countries: isolation of the location and difficulty to access it.

Since solid waste disposal is dependent on transportation infrastructure it is expected that mountain areas in the Balkan countries face the greatest problems with waste disposal. Their practice on waste management has started recently, meeting difficulties primarily in rural areas. In contrast to both cities and villages, Alpine countries “have the luxury” of focusing on tourist locations outside the settlements. So, mountain areas in the Balkan suffer from the unfinished actions of their governments and their citizens’ lack of awareness (subjective aspect), while Alpine countries prevalingly deal with geographic difficulties (objective aspect); nevertheless, both affect the environment, including its ecological and aesthetic function.

4.4.2 Social Infrastructure

The social infrastructure is understood here as buildings with a function to facilitate the gathering of citizens in order to provide them certain services and enable them to fulfil particular needs with regard to education, social activities or health. In addition to an analysis on the buildings, the section on social infrastructure includes a glance at the problems concerning the working staff at the social facilities. The following paragraphs appoint categories of problems in social infrastructure: education; cultural and entertainment activities; health care; and care for the elderly.

4.4.2.1 Lack of Facilities for Education, Culture and Entertainment – Social Exclusion with Regard to Knowledge and Culture

D. Tar (2007) raises the accessibility to education facilities as a crucial problem that faces various constraints in Serbian mountain areas. In contrast to this is the fact that 99 primary schools were closed between 1996 and 2007 in 44 municipalities of Serbian mountain areas (based on SORS, 1997 and 2009a). When there are a considerable number of potential pupils, primary schools do not close, therefore, this problem is particularly exaggerated in rural mountain areas where only a few pupils remain and schools are being closed because of expenses. Other Balkan countries have similar problems - FYRO Macedonia and Albania. The education system has seriously deteriorated in terms of both physical infrastructure and working staff in rural areas (Ginovska, 2007; Skreli 2007). In some cases, primary schools do not exist or have a few students studying in very bad conditions (Ibid.).

Accessibility to universities in mountain areas shows that the Alps (Germany, France, Austria, Switzerland) and mountains in Czech Republic have very good accessibility, while the Scandinavian Mountain Massif, the Pyrenees, the Romanian Carpathians and some Balkan Mountain Massif countries (Bulgarian, Greece) are considerably below the European average (EC, 2004). Serbia rather belongs to the last group of countries. There are only four universities and those are situated in only three locations. Three universities are in the Dinaric Alps - two in Novi Pazar, one in Kragujevac; and the fourth is in the Balkan Mountains massif – in Niš (Scribd, 2008). The accessibility to those educational facilities is rather difficult for most of the citizens in Serbian mountain areas when the quality of transportation infrastructure and time costs is taken in account.

Also, taking in consideration the bad local road quality and absence of public transport, the access to primary and secondary schools is considerably difficult for pupils in isolated areas. In cases like this, a family could chose to split, as was the choice of a family interviewed in a very isolated village in Kuršumlja municipality (Rhodopians) in Serbia: the interviewee stated that the school had been shut down two years previously (in 2007) and that the mother and child, at the age to start school, moved to the municipal urban centre. The grandparents and father stayed in the village because of the shop which they are running as a source of income. Thus, the problem influences not only the education structure of the population, but also migration and social instability by tearing families apart.

Similar to the education infrastructure, cultural services in the mountains of the Balkans, developed a couple of decades after the Second World War, in recent years have been neglected or completely abandoned (Ginovska, 2007; Mileva, 2008; EURAC, 2008). Additionally, the population in this region and the South-Eastern Carpathians also lacks entertainment facilities (EURAC, 2008). Anyhow, Balkan countries are not alone in those problems. Namely, people in Spanish mountain villages suffer from a deteriorated social infrastructure as well (Moscoso, 2006) and some Italian villages in the Alps have gone through the closing process of schools, banks and other facilities (Zucca, 2007).

Social infrastructure with regard to opportunities for realisation of social life and cultural activities in Serbian mountain areas can be better analysed qualitatively than quantitatively. The reason is poor statistics on this topic which record only the number of cinemas and cinema performances per municipality. Nevertheless, M. Anđelković and H. Anđelković (2003) examined cultural opportunities and infrastructure in the case of villages in the Niš municipality. There, they argued that there are great differences between villages and the city and even if the city provides cultural contents, the population in villages does not benefit from this (Ibid.). Additionally, the same authors indicate the difference between existing infrastructure and its real use. Namely, almost each village has a building to use for cultural community activities. In reality those are just called “houses of culture” but they are used for other purposes or not used at all. Some of them were built during the 1950s; today they are not appropriate for use (Ibid.). According to the same authors, libraries are not adequately developed and there is a lack of cinemas, clubs, galleries and theatres (Ibid. 2003).

Out of 18 villages visited for the purposes of this study, the situation was different only in Mokra Gora (Užice municipality) where the Šarganska osmica and Kustendorf (Drvengrad) projects represent a successful focus of cultural life and cultural organisation mainly for tourism purposes and also for the local population. Inhabitants in the village of Čuštica (Knjaževac municipality) work hard to organise cultural exchanges and maintain their humble building-infrastructure for children of school age from other parts of Serbia. Their financial capacity is very small and most of the efforts are based on voluntarism. The villages of Crna Trava (Crna Trava municipality) and Lukovo (Kuršumlja municipality) are centres for small-scale socialising (mainly spontaneous, in the market area, shop and cafes on the central square), but with no organised and real cultural connotation. In fact, entertainment and cultural facilities are primarily based in cities and the population in villages has almost no opportunity in those terms. Thus, rural municipalities (here defined as municipalities without urban settlement), are in the most problematic position in using their leisure time.

So, closure of schools and other social facilities is a reality in all European mountain areas; however, the quality of the provided buildings and working staff is a particular problem in the Balkan Mountain Massif and Pyrenees. The situation further deepens social instability in mountain areas because families are apart from each other or entire families emigrate in order to provide their offspring with an education. The absence of facilities for cultural and entertainment activities socially excludes inhabitants of rural communities, thus being unattractive for young people, which are the primary emigration group.

4.4.2.2 Low Accessibility and Quality of Health Care – An Impairing Factor on Life Quality

With regard to accessibility and quality of health care, Serbia and other Balkan mountain countries share the problems. SARD-M (Skreli, 2007; Ginovska, 2007; and Mileva, 2008) reported that in Albania, Macedonia and Bulgaria, the population does not have adequate health care and lacks basic health services, which is a situation very similar to that of Serbian mountain areas.

The statistical base in Serbia does not ease analysis on health care services and infrastructure. Indicators shown in statistics are the number of pharmacists (not pharmacies) and number of patients per doctor (SORS, 2009a), both collected at a municipal level. Accessibility to a doctor does not represent a significant problem when it is measured by the number of patients per doctor, but it is problematic with regard to accessibility for inhabitants of remote rural areas. Namely, the number of patients per doctor in developed Alpine and western European countries is between 280 and 400 (Doctors of the World, 2007). Therefore, 253 inhabitants per doctor in the Balkan Mountains; 378 inhabitants per doctor in the Carpathians; 408 inhabitants per doctor in the Rhodopians and finally, 432 inhabitants per doctor in the Dinaric Alps (based on SORS, 2009a) cannot be considered as a particular difficulty. In contrast, unequal distribution of health-care clinics and hospitals is a significant problem for remote areas of municipalities due to their predominant concentration in urban centres. Interviews with local residents testify to this. Namely, most of the elderly citizens have difficulties in getting medical help and buying medicines. They are not capable of travelling themselves and younger members of their families do not necessarily live at a close distance, so there is a necessity for organised help by the community. Also, a relevant fact is that such isolated locations require specialised vehicles.

The distribution of pharmacists differs among the mountain areas of Serbia; however, it occurs as a serious problem for each of them. Since there is no other statistic but the number of pharmacists per municipality, the assumption that is here taken for analysis is that each pharmacy must have at least one pharmacist employed. In that case, Serbian mountain areas have a problem because 43 municipalities (more than a half!) have no pharmacy at all (based on SORS, 2009a). The villages included in the field for this dissertation have no pharmacies, which is a problem for elderly community members who are regular users of medicines but are not able to go for their supply on their own.

In continuation to the educational and cultural facilities, the quality and possibilities for realisation of health care represent another strike on life quality in Serbian mountain areas. This is particularly the problem in the Balkan countries and predominantly in rural areas.

4.4.2.3 Insufficient Infrastructural Capacity in Care for Elderly – Negligence of Needs for the Most Numerous Part of the Population

The aging population structure is a problem all over European mountain areas; therefore care for the elderly should be a focus. Judging by the period from 1996 to 2003, the number of senior-care facilities (including specialised hospitals, retirement homes, charity organisations) increased by almost 50 % in Germany (Hawley, 2003), thus following the increasing age trend. In contrast, capacities to host the elderly in retirement homes in Serbia are inadequate since there are only 15 retirement homes⁴¹ in its mountain areas (Ministry of Labour and Social Policy

⁴¹ Retirement homes are located in following municipalities: Krupanj, Požega, Kragujevac, Kraljevo and Brus in the Dinaric Alps; Kruševac, Blace, Prokuplje, Leskovac and Surdulica in the Rhodopians; Aleksinac, Niš, Knjaževac and Dimitrovgrad in the Balkan Mountains; and Kučevo in the Carpathians.

[MLSPRS], 2010). The director of the Institute for Social Protection of the Republic of Serbia⁴² has stated that needs for retirement homes exceed their capacities. The Serbian Carpathians, with the highest percentage of elderly inhabitants, have only one retirement home.

The increasing trend in the number of seniors and senior-facilities also requires a rise in the number of staff. In the case of Germany, the staff demand is significantly covered by emigrants from ex Yugoslavian countries who are paid for their work, and are often organized within private institutions for senior-care (Hawley, 2003). In contrast, interviews with social centres in Serbian mountain municipalities indicated that their current staff capacities cannot cover the demand. Additionally, low purchasing power and the fact that the vast majority of seniors in Serbian mountain areas were self-sufficient farmers (they receive no pension), results in their ability to pay for more costly private services being strongly diminished. Therefore, help for the elderly is often reduced to volunteers from the local community, which certainly is not sufficient.

Due to the lack of information in English, Serbian mountain areas are here compared only with Germany as a representative of European mountain countries that appear to be more efficient in finding solutions on matters of infrastructure. The comparison shows that elderly citizens in Serbian mountain areas greatly depend on spontaneously organized volunteers, while the demand and willingness to pay result in the engagement of more working staff in Germany, primarily in the private sector. In Serbia, local social institutions and the citizens themselves do not have the financial power to provide more staff working on this issue. So, the gap between demand and supply is much more considerable in Serbia than in this Alpine country, which results in the majority of its elderly population being neglected in care and treatment.

4.5 Management Approaches to Mountain Areas

This section is focused on the management approaches to mountain areas in Serbian and other European mountain countries. Management instruments and models of governance, in terms of institutions and documents, are not only a matter of mountain areas, but general governance model. This is especially the case in countries such as Serbia where mountain areas have just been introduced and considered a specific matter and where management over them can be understood only when the management approach of the state is understood. The future course of mountain development might be substantially influenced by national issues like the centralised government model, size and jurisdictions of basic administrative units, transparency of decision-making, non-synchronized institutional work, etc. Even though some of the issues for mountain area management are actually part of a general (national) system, European examples integrated in this section show problems in management also specifically for mountain areas and what the situation is in Serbia with regard to this matter.

⁴² Interview conducted in June 2009.

4.5.1 Centralised Government Model – Time-Consuming and Needs Non-Matching Decision-Making

Unitary countries and their centralised governmental model result in significant dependency of local governance on national government. Regions and municipalities that are not devolved jurisdiction of decision-making, including legislative power and financial management, are very limited to respond to problems and needs occurring on their territory. This issue is beyond mountain areas themselves, but since mountain massifs have the character of regions and mountain municipalities are part of the overall political-administrative structure of a state, they depend on it. Therefore, the following paragraphs will show similarities and differences between European mountain countries with regard to this.

There are basically two groups of European countries. In the first group belong countries with a three tier systems where decision-making power is shared between national, regional and local levels. Representatives of this group are Alpine countries: Austria and Germany as federal countries (Statoids, 2001; European Election Database [EED], 2010; Gemeindeverzeichnis, 2010) and Switzerland which is a co-federation with a guaranteed high level of freedom in decision making and governing at a regional (cantonal) level, as well as active involvement of the local population (EED, 2010; Federal Chancellery of Switzerland, 2010). In the other group is Serbia together with other Carpathian and Balkan mountain countries: Bulgaria, Ukraine and Romania (Castelein et al., 2006; Romanian Statistical Office [RSO], 2007; EED, 2010); as well as France which stands out from the group of Alpine countries (EED, 2010). However, mountain regions in France are honoured with special status which devolves certain decision-making powers to them and also involves various stakeholders in the process (Castelein et al., 2006). Similarly, mountain regions and provinces in Italy have certain legislative and financial power in spite of the fact that Italy is a unitary country (Castelein et al., 2006; EED, 2010).

By the Constitution of the Republic of Serbia there are two autonomous regions (Vojvodina; and Kosovo and Metohija) and Central Serbia which is guided by central government so far. Serbian mountain areas, as defined for this dissertation, are part of Central Serbia⁴³. This indicates that if decisions and financial management are not devolved to the local community and local government they are directly dependent on decisions by central government. Basically, it is a two tier system. A testimonial on this problem is an interview with the Chief of the Municipal Authority and the Secretary in the Local Assembly of the Crna Trava Municipality who made an appeal against the time-consuming procedures in the centralised system. Namely, jurisdictions of local authorities are narrow and any actions of concern for the local community have to first be discussed and approved by the national government which is time-consuming or in some cases an answer never comes back, because issues in small mountain municipalities are usually not a priority in the complex range of issues the Government is supposed to deal with.

⁴³ The first steps towards regionalisation have been made with the decision that Central Serbia will have three regions: Belgrade Region, South/East Region and Šumadija/West Region.

Besides this simplification of the decision-making model in Serbia, the municipal budget is highly dependent on decisions made by central Government; therefore, local governments have difficulties in planning annual actions due to the constant budget uncertainty (Levitas, 2008). Again a testimonial by the Chief of Municipal Authority and Secretary in Local Assembly of Crna Trava Municipality stresses that mountain municipalities are too financially weak to treat all the crucial problems and they are not even capable of financing development plans or strategies. Even though change has started, the process faces certain difficulties and obstacles that are yet to be overcome (Ibid.). Similar dependency of local government is noted in other unitary countries such as Bulgaria, Romania and Ukraine. In contrast, there are Austria, Germany and Switzerland with budget and decision-making rights.

Similar to financial issues, there is a significant difference in devolving legislation between centralised and decentralised countries. Regions in Austria, Germany and Switzerland possess legislative power, mainly with regard to issues which are not covered by federal acts (EED, 2010, Federal Chancellery of Switzerland, 2010). In contrast, regions in Bulgaria, France, Romania (EED, 2010) and Serbia do not have legislative jurisdictions. The cases of Italy and Ukraine can be noted as having a middle position due to the special statuses of their regions that also bring freedom in the sense of legislative power. In comparison to the already described regional statuses in Italy, there is only one region in Ukraine which has been delegated autonomous status - the Autonomous Republic of Crimea (Castelein et al., 2006). This is of particular relevance for mountains and their people in Ukraine since the Republic of Crimea comprises one of two Ukrainian mountainous areas.

So, European mountain countries share two basic models, one more deliberate for their regions and local governments like in Austria, Germany and Switzerland, and the other keeping regional and local units dependent on the will of central government, like in Serbia, Romania and Bulgaria. The problem in later examples is that it takes much more time for decisions to be made because they need to be made or approved by national government. The other aspect is that governments below a national level can reflect the situation and needs of the population more realistically. It is important how directly decision-making and financial power is devolved to local communities because those communities are familiar with their own needs better than anyone else.

4.5.2 Large Municipalities – Superficial Responses Inadequate to Mountain Population Vision

Immediacy between citizens on the one hand and decision-making with financing on the other hand is reflected in the size of the local (smallest) governmental unit. Shown in Table 4-9, Bulgaria is the only country that can be compared with Serbia with regard to this matter. Both comprise municipalities with more than 400 square kilometres on average while other example countries have even 30 times smaller areas. Comparing the average size of the population, the proportions are similar, attaining differences up to 25 times. Such a significant difference indicates considerably different conditions for the creation and execution of potential responses in Serbia compared to other European mountain countries.

Table 4-9: European Mountain Countries - Average Size of Local Administrative Units (2010*)

European Mountain Country	Area (km ²)	Inhabitants
Austria	35	3,500
Bulgaria	410	28,000
France	15	1,600
Germany	30	7,000
Italy	37	7,100
Romania	75	7,000
Serbia	460	45,400
Switzerland	14	2,300
Ukraine	20	1,600

Source: based on Statoids, 2001; Statistical Office of the Republic of Serbia, 2003; RSO, 2007; Comuni-Italiani, 2010; Federal Chancellery of Switzerland, 2010; Internet World Stats, 2010; Swiss World, 2010; World Statistics, 2008 and 2010

*Most of the data are obtained for 2010. In the case of Austria the data obtained are for the year 2001, for Serbia 2002 and for Bulgaria 2008

This is particularly relevant from the viewpoint of the rural population in Serbian mountain areas. Namely, municipalities consist of several dozen settlements and the local government is situated in the centre of a municipality; thus mostly reflecting the needs of the urban population. On the one hand it is appropriate because the urban centre is the most populated, but on the other hand the rural population in a large number of villages is being neglected. Their needs are not recognised because they are excluded from the process, which encourages them to emigrate.

So, the difference between Serbia and most other European mountain countries with regard to size of their local units is evident; particularly when compared to the economically most prominent examples. Nationally developed responses for Serbian mountain area are very few and rather superficial, which motivates the mountain population (having no jurisdictions in decision-making) to emigrate to more thoroughly planned and financed areas, specifically to the capital city.

4.5.3 Absence of Transparency and Unresolved Conflict of Interests – Management Independent on Needs of Mountain Communities

The absence of transparency in decision-making processes favours private over public interests and excludes the local – particularly rural – population from this process. The Swiss Alps are an opposite example where local communities were first asked to express their opinion on the accession of a protected natural area to a UNESCO list, and only after they accepted it did the state take further steps (Wallner, Wiesmann, 2009). This practice is in contrast to the unsatisfying estimation of transparency in the work of institutions and plan/strategy development in the Czech Carpathians, as stated by the SARD-M report (Hajduchova, 2007). Similarly, the procedure of decision-making in Serbia does not include the local population, except in the preparation of spatial and urban plans. Namely, the voluntary practice of spatial planners in the process of plan creation is to have direct contact with representatives from local communities and sometimes with local residents themselves. The official act of local population

participation is a public discussion organised after the first draft of a plan is completed, but unfortunately, limited information flow is a barrier to rural inhabitants: the interviewed population either stated that they had heard about the spatial plan for their area (being familiar with no specific content) or had not heard anything about it. M. Pucar and M. Nenковиć (2003) confirm that participation in the planning process in Serbia is not satisfying for all stakeholders, especially for the rural population and that lack of information flow and the physical isolation of rural mountain communities confine the decision-making power of the rural population in Serbian mountain areas.

Master plans for tourist areas⁴⁴ are a particular example of unclear transparency in Serbia. Namely, a master plan for tourist areas is a practice of the Serbian Ministry of Economics and Regional Development where a finalized proposal is given to the Government to adopt it by means of a regulation. So far, thirteen master plans have been prepared, with only one adopted and published in the Official Gazette (Master Plan for Stara Planina Mountain). The public is excluded from master plan preparation and evaluation because they are not regulated by the Law on Planning and Construction (2009)⁴⁵. Additionally, the links and hierarchy of the master plans with spatial plans are not regulated, therefore, instead of adjusting a master plan to a spatial plan, the spatial plan is forced to adjust to the content of the master plan, even though spatial plans are hierarchically superior.

Turning back to participation of the local population, the inhabitants of remote rural mountain areas in Spain are not satisfied with the availability of information and have a feeling of exclusion from the planning processes (Moscoso, 2006) and the participation of stakeholders is evaluated as not satisfactory in Poland (Ruszecka, 2007). In the case of Balkan countries, decisions often depend on the interests of power-holders (e.g. politicians) rather than on public interest (Balkan Foundation for Sustainable development [BFSD], 2008). Innovations in management of a protected natural area in the Ukrainian Carpathians include involvement of public and private stakeholders, but the process meets certain difficulties in communication and cooperation between the parties (Geyer, Hamor, Ibisch, 2009). Again, there is a contrasting situation in the case of protected natural areas in the Swiss Alps, where the management process is based on a multi-stakeholder participatory model that includes representatives of different interests (Wallner and Wiesmann, 2009). Similarly, R. Robinson and L. Keenan (2010) write about the Rhön Biosphere Reserve in Germany, the strategy for which was developed by local communities and various stakeholders, reconciling their interests. And finally, participation of the local population has actually been a foundation in the endogenous development concept practised in Austria since the 1970s (Dax, 2001).

Based rather on particular (private) than general (public) interests, spatial planning in Serbia has weakened and deteriorated in quality (Vujošević, Zeković, Maričić, 2009). As Serbia is one of the most corrupt European societies (Table 4-10), public interests are significantly

⁴⁴ A master plan in the Serbian context stands for a business plan of a tourist destination.

⁴⁵ The Law on Planning and Construction regulates public participation for each planning document where participation is guaranteed in terms of a public discussion on a plan within 30 days. The master plans are regulated by the Law on Tourism, but with no correspondence with the Law on Planning and Construction.

endangered (Stojkov, 2009), especially in the process of implementation of spatial planning documents.

Table 4-10: European Mountain Countries – Corruption, Corruption Perception Index [CPI] (2009)

Country	CPI	Country	CPI	Country	CPI
Sweden	9.2	Cyprus	6.6	Montenegro	3.9
Switzerland	9.0	Slovenia	6.6	Bulgaria	3.8
Finland	8.9	Spain	6.1	FYR Macedonia	3.8
Norway	8.6	Portugal	5.8	Greece	3.8
Germany	8.0	Hungary	5.1	Romania	3.8
Ireland	8.0	Poland	5.0	Serbia	3.5
Austria	7.9	Czech Republic	4.9	Albania	3.2
United Kingdom	7.7	Slovakia	4.5	Bosnia and Herzegovina	3.0
Belgium	7.1	Italy	4.3	Belarus	2.4
France	6.9	Croatia	4.1	Ukraine	2.2

Source: Transparency International, 2009

So, with regard to population participation and transparency of the decision-making process Serbian mountain areas are most similar to other Balkan mountain countries and most different from the Alpine countries (Austria, Germany and Switzerland), where participation and involvement of the local population in the decision-making process appears to already be a tradition. Carpathian countries, such as Ukraine and Czech Republic, are going through the process of institution building, including increasing the participation of stakeholders, but are still meeting certain difficulties on the way. This would be the next stage for Serbia, particularly taking care to include the rural population that is most excluded from the process.

4.5.4 Unspecialised Institutions and Inadequate Staff Structure – Bases for Unsuccessful Mountain Area Management

The Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia and the Institute of Architecture and Urban & Spatial Planning of Serbia have addressed mountain areas, with regard to development and research respectively, but their focus in the case of the Ministry had a sectoral and changeable-criteria character, while in the case of the Institute it was temporary. The Institute was particularly focused on research into mountain areas over the project span (Sustainable Development of Mountain Areas in Serbia project 2002-2004), while the Ministry shifts its criteria for marginalised (less favoured) areas each three years and limits responses to within the borders of agricultural development.

The other problem for mountain areas in Serbia not being institutionalised is the lack of specific responses and measures. For example, four main types of agricultural areas were differentiated in the Draft for Rural Development Strategy 2009-2013 (Ministry of Agriculture, Forestry and Water-Management of Republic of Serbia, 2009). Even though hilly and mountainous areas are defined as one of the main types, they were assigned the same recommendations and measures as other types of areas. It is actually the case in this document and the National Rural Development Programme 2011-2013 (2010) that analytical parts of strategic and planning

documents note the particularities (in problems and advantages) of mountain areas, but those particularities are not covered by specific measures.

There is no law in Serbia that explicitly deals with mountain areas, as is the case in France, Italy, Switzerland, Austria, Romania, Ukraine, Bulgaria and Greece (Castelein at al., 2006). Nevertheless, some legislative acts such as the Law on Nature Protection (2009) relate to mountain areas, pointing them out as reservoirs of highly valuable ecosystems. There is also the Law on Agriculture and Rural Development (2009) that specifies no measures to mountain areas specifically, but suggesting different amounts of support depending on the difficulty level and circumstances of an area, implicitly targeting farmers on steep-slopes. Unfortunately, the document proclaims only “higher support” for such areas, but gives no precise description of what this support is supposed to be.

Nevertheless, the Law on Planning and Construction (2009) has the most direct role in the management of mountain areas in Serbia, which declares the creation of a spatial plan for areas of special use. Those plans are being made for areas of special interest for the state: areas of natural, cultural and historical value, hydro-energy exploitation, mining sites and tourism development, which are particular advantages of Serbian mountain areas. The mountain areas are still under the national auspices in spite of the plans imposing establishment of a council – including the national government and representatives of municipalities which are within borders of the spatial plan – to be responsible for coordination and implementation of the plan (Spatial Plans for Areas of Special Use – Vlasina (2004), Kopaonik (2008) and Stara Planina (2009)). Unfortunately, there is no record that such body has ever been formed and put into practice⁴⁶.

No plan of general regulation or of detailed regulation has ever been made for a mountain village, with the exception of mountain tourism resorts. Those documents are also mentioned in this Law on Planning and Construction (2009) in order to address smaller spatial scales. With regard to the fact that rural areas suffer the most from the absence of technical and social infrastructure, it can be considered an omission of the management.

Institutional problems in spatial development are widely present in Serbia, with the predominant characteristics of transitional countries (Stojkov, 2009). Experts in local governances, engaged in the field of spatial planning, are in most cases urban planners; therefore, local and regional plans are understood as urban plans (Ibid.). Inadequate structure of professional staff contributes to often unclear institutional jurisdiction and responsibilities which are a result of overlapped, unclearly defined and undefined institutional responsibilities (Ibid.). One of the examples is the public company Srbija Šume (Serbian Forests) which is primarily in charge of taking care of forest management, but in cases such as the Golija Nature Park, the state gave them the responsibility of taking care of the park's management, protection and development. The result is an impaired quality in spatial planning and so called

⁴⁶ According to interviews with (1) the Senior Scientific Associate, Assistant Director at the Institute of Architecture and Urban & Spatial Planning of Serbia and (2) the Director of the Republic Agency for Spatial Planning of the Republic of Serbia (both conducted in June 2009).

“institutional zombies”, meaning institutions that follow decades of old organisational models with no efforts to adjust to a real (contemporary) situation (Vujošević, Zeković, Maričić, 2009). Finally, speaking generally about Balkan countries, there is a lack of provision of competent experts for integral development (BFSD, 2008).

For example, evaluation of achieved results, targeted by local strategies, showed the absence of staff to be in charge of management strategy implementation (Lazarević Bajec, 2009). It was found that institutional and staff problems are characteristic for Balkan mountain countries. As there are no institutions explicitly dealing with mountain areas, responses and research on them are inconsistent and incomplete. In contrast to most Alpine and some Carpathian countries, Serbia has not developed legislation on mountain issues and existing acts tend to be unspecific and broad in defining responses to problems. Even measures that are specific and relevant, being announced by spatial plans for areas of special use, are omitted with nobody taking responsibility for their implementation.

4.5.5 Uncoordinated and Unsynchronized Institutions and Documents – Confusion Impairing Implementation of Plans

Tendencies to adopt European practices and methodologies lag in good results due to many aspects (market, legislation and decentralisation) in Serbia which are different than in other European countries and not yet stabilised (Lazarević Bajec, 2009). A problem is time synchronisation of plans in Serbia, where the adoption of urban and local plans precedes adoption of regional and national plans, e.g. an analysis has shown that only 1/3 of the aims in local strategies are the same or similar to aims prompted by the Poverty Reduction Strategy and National Strategy for Economic Development (Ibid.). Legislative documents are not coordinated (Stojkov, 2009), neither have local governances established cooperation with each other (Lazarević Bajec, 2009).

Similar processes in other Carpathian countries, which have changed previously existing and further established new institutions, have influenced the quality of cooperation between ministries, communication and cooperation between different levels of governance, developing common interests and exchanging experiences with neighbouring countries (EURAC, 2008). The outcome is goals in different strategies and policies being antagonistic to each other, e.g. the goal for exploitation of forests and natural protection (EURAC, 2008). Therefore, scientists and experts are not considered efficient in adequate synchronisation of goals and interest of various stakeholders in the Carpathians (Gurung, et al, 2009).

Besides cooperation and synchronisation of development goals within the country, Alpine countries have developed a successful international network between each other. This cooperation is shaped by the Alpine Convention (1991) and its protocols that put the Convention into action. Carpathian countries, initiated by Ukraine, made a similar attempt with the Carpathian Convention (2003), but are still slow to activate its protocols.

Annual changes of programs for rural support in Serbia lead to inconsistencies in measures they set; thus surpassing the adaptation speed of farmers to different branches in agricultural

production (Ministry for Agriculture, Forestry and Water Management⁴⁷, 2009). Generally, the problem for Serbian mountain areas is the unsynchronised duration of policies and plans on the one hand and budget support on the other hand. Namely, strategies, plans and policies have a time perspective of five-ten-twenty years, while the governmental budget is established on an annual basis (Stojkov, 2009).

As the Carpathians comprise a mosaic of newer EU member countries, pre-accession countries and non-member countries, organisational difficulties have some specifics in comparison to Western European mountain massifs. Common characteristics of Carpathian countries are undefined horizontal, vertical and international cooperation and communication (Rusztecka, 2007; Hajduchova, 2007; EURAC, 2008). Changes of existing and the establishment of new institutions in Carpathian countries influence the quality of linkages in cooperation between different ministries dealing with mountain areas, the development of communication and cooperation between different levels of governance and developing common interests and exchanging experiences with neighbouring countries (EURAC, 2008). Besides cooperation between governance institutions, scientific cooperation is also something to be improved, with topics and disciplines to be adjusted (Ibid.).

It is similar in Serbia: the Director of the Republic Agency for Spatial Planning in Serbia stated that measures set by spatial plans are not supported by other sectoral policies of the Republic such as social, economic or demographic ones. An integral approach is assigned by the Republic Agency for Spatial Planning (spatial planners), while actions of ministries are based on sectoral, politically driven decisions. The result is that the priority for each ministry is to fulfil their own policy, with no regard for measures declared in spatial plans. The other issue stated by this interviewee is the application of multidisciplinary rather than interdisciplinary approach. This means that each expert in a spatial planning team brings up an individual perspective of his/her own topic (e.g. nature protection, demographic development, social services) regardless of other fields of expertise. In some cases this results in dismantling demographic processes while planning economic development – projecting economic perspectives beyond population capacities, aging, depopulation, emigration, etc.

There is a general problem in the implementation of spatial plans, strategies and policies in Serbia also due to the changes of parties with political power, where the current party usually omits documents adopted and ratified by the previous party (Vujošević, Zeković, Maričić, 2009). With regard to the lack of governmental and institutional coordination, strategic and spatial planning are practised separately from other forms of sectoral planning (social, economic, budgetary); therefore, implementation and success of planning documents is difficult (Stojkov, 2009) and their applicability is more endangered than the quality of the plans themselves (Lazarević Bajec, 2009). In Chapter 13 – Agenda 21 (UN, 1992), it is stated that implementing solutions in reality is as important as making a good choice of them, which appears to be a particular problem in Serbia, but also in other Balkan Peninsula countries (BFSD, 2008).

⁴⁷ According to an interview with the consultant for rural development – department for rural development (conducted in June 2009)

Moreover, development of master plans completely disregards the significance of cooperation with other state institutions responsible for spatial development (e.g. the Ministry for the Environment and Spatial Planning and the Republic Agency for Spatial Planning of Serbia), as well as hierarchical order between general and more specific documents. Thus, out of nine master plans with regard to the mountain areas of Serbia, five of them were completed before comprehensive spatial plans⁴⁸ for the same areas were adopted (Golija Mountain; Stara Planina Mountain; Vlasina; Kučaj and Beljanica Mountains; and Tara Mountain)⁴⁹. This indicates that sectoral documents are being accomplished before comprehensive and general plans. Similarly, programs for protection, management and development are supposed to be formed after the spatial plans of areas for special use, which is differently applied in practice⁵⁰.

The topic of illegal building was additionally indicated by the Leading Spatial Planner in Užice municipality and the Chief of the Economic and Finance Department in Kuršumljia municipality⁵¹. In Užice a need has been recognised to regulate building outside of urban areas which is not obligatory by law, and in the case of the municipality each request must be individually considered instead of commonly being regulated under a plan. For this reason, Prolom Banja, a spa settlement in Kuršumljia municipality, has been densely built up with no previous permit from the side of the authorities.

In an interview with the Leading Spatial Planner in Užice⁵² it was discovered that demand for conversion of agricultural land into building land has increased in spite of the results of an analysis showing that the capacity of existing residential areas corresponds to the size of the population. This indicates that land resources in urban areas are not properly used and that this aspect should not be neglected in future spatial plans.

4.6 Summary

In the analysis there are five categories of problems indicated: environmental, demographic, infrastructure, economic and management. They show a difference in comprehension and types of functions they impair. Thus, natural resources of mountain areas – air, soil water and biodiversity are victims of superficial monitoring and uncontrolled and irresponsible management threatening both the ecological and economic functions of Serbian mountain areas, as well as other mountain areas in Europe.

Low population density, emigration and a low birthrate (depopulation), an aged population structure and gender imbalance represent challenges for infrastructural endowment and social relations. They result in weakened human and economic resources, increased need for social care and calling demographic and economic future of mountain areas into question. Additional threats to social and economic functions are increased construction and maintenance costs,

⁴⁸ Here, comprehensive spatial plans refer to spatial plans for areas of special use, although master plans were developed even before regional and national plans.

⁴⁹ <http://www.rapp.gov.rs/index.php?kuda=dummy&sta=planovi&idplana>

⁵⁰ According to an interview with the Director of the Republic Agency for Spatial Planning of the Republic of Serbia (both conducted in June 2009).

⁵¹ Both interviews were conducted in July 2009.

⁵² Interview was conducted in July 2009.

economic delay with regard to the European economy, negligence of resources, unattractive job offers, lack of competitiveness and accessibility to markets, all which endanger the innovativeness and adoption of contemporary knowledge.

Further, problems in technical and social infrastructure impair all aspects of development – ecological, economic and social. Low accessibility, quality and maintenance and a lack of various types of infrastructure reduce the mobility of the population and products, impair life quality and threaten the environment, threaten economic development, hinder knowledge and information flow, contribute to social exclusion (education, informativeness, culture, entertainment) and do not meet the needs of the most numerous population age groups (elderly).

Finally, the management of Serbian mountain areas appears to be time-consuming and superficial in actions that do not correspond to current needs and omit complete implementation of responses. Thus, problems in the field of management represent another category that impairs ecological, economic and social functions.

Articles, studies, statistical books, interviews and other sources have confirmed that Serbian mountain areas are more similar to other European mountain areas in terms of environmental and demographic issues, while differing from them in matters of economic problems, accessibility and infrastructure endowment and finally management of mountain areas. The greatest similarity to Serbian mountain areas appears to be the Balkan Mountain Massif and Carpathian areas in other European mountain countries. In some matters, such as the low profiled labour force, communication services and social facilities, the Pyrenees are also similar to Serbian mountain areas.

Almost all categories and aspects of problems are common for all European areas, but they differ significantly in terms of extent. Thus Alpine and some aspects of Scandinavian mountain areas show a considerably lower level of problems. The reasons are that they have been addressing the problems for a longer period of time and that they have developed a successful monitoring system that reflects in the actions mitigating the problems. This is particularly characteristic for the Alpine region, while the Scandinavian Mountain Massif does not face additional pressure (for example soil erosion) for being geographically untypical compared to other mountain areas.

It is also of importance to state that in many aspects of problem categories, their extent is significantly higher in rural areas and for villages than urban areas and cities. This dichotomy is strongly related to all aspects of demographic problems (low population density, emigration and low birth-rates, aged population structure and gender imbalance), all aspects of infrastructure endowment and quality problems (absence or bad quality of roads, railways, water, sewage and electricity supply, communication services, waste management, education and cultural facilities, health care and care for elderly) and aspects of economic and management problems (land abandonment, unemployment, under-average income, product and labour market, and size of local governing units).

5 RESPONSES TO PROBLEMS IN SERBIAN AND OTHER EUROPEAN MOUNTAIN AREAS

The aim of this chapter is to answer the question: how do Serbia and other European mountain countries address problems in their mountain areas? The experiences in Serbia and other European mountain countries, particularly those with a lower extent of problems (e.g. Alpine countries), are going to be used as the foundation for considering the sustainable development perspectives for Serbian mountain areas.

The hypothesis is that European countries have more experience in addressing problems in their mountain areas than Serbia, which has just recently started treating them explicitly and is still having problems to practically apply even the measures already declared. In order to prove the hypothesis, the experiences of some Alpine and Carpathian countries, including Serbia are looked at. The Alpine countries are considered as beneficial examples due to the smaller extent of development problems in their mountain areas, while Carpathian countries are among the most similar to the Serbian mountain areas (Serbia is also a Carpathian country). For this reason, as well as the availability of literature and engagement in international cooperation regarding their mountain areas, Austria, Italy, France, Germany, Switzerland, Bulgaria, Romania, Ukraine and certainly Serbia are taken as objects of analysis. There are two exceptions: Scottish and Finish experiences are mentioned in a few examples because of their specific measures that are not found in written sources on other countries. Altogether, sources comprise national and sub-national, but also international (European) examples, taking into consideration particularly explicit, but also implicit mountain area oriented documents.

So, this chapter is structured to firstly present the instruments European countries use to develop responses to their mountain areas and then the principles and measures on mountain area development and management that they have launched in order to address their problems. The first section presents legislation, institution-building, financial management, strategic and spatial planning and local population participation in local initiatives. After the overview on instruments, the following section presents an overview of principles and measures in relation to different problem categories: environmental protection, demographic decline, economic difficulties, accessibility and infrastructure, and finally on mountain area management. After this, a summary follows.

5.1 Instruments for Mountain Area Development and Management

The review of literature showed that there are different instruments used in European mountain area development and management, each area being specific and comprising qualities that are missing in another. Measures should be executed by various instruments and founded on principles. Therefore, this section is the analysis of instruments towards the enhancement of Serbian mountain areas through its own and examples of other European mountain areas. The sub-sections give an insight into legislation, institution-building, financial management, strategic and spatial planning and finally participation of the local population, thus including various aspects - from the role of public-private-civil sectors, short-medium-long term decision-making to legally binding and non-binding actions.

5.1.1 Legislation on Mountain Areas – Instrument for Detailed, Obligatory and Internationally Cooperated Development

The specifics of legislation and laws on mountain area development are to be verified through both expert and political discussion, which is expected to increase successful performance and application of principles and measures declared in them. Eight out of more than thirty European mountain countries use legislation as an instrument in order to respond to problems in their mountain areas. This instrument has been practised for decades in countries for which the analysis in the previous chapter shows them to have the least extent of problems: Italy (since 1947), Switzerland (since 1952), Austria (since the 1970s) and France (since 1985) (Castelein et al., 2006). Poland also had its Mountain Act established in 1986, but due to political changes it was already annulled in 1989 (EC, 2004). Drawn by those examples, Greece (since 1990), Bulgaria (since 1993), Ukraine (since 1995) and Romania (since 2000) have followed the practice on mountain oriented legislation (Castelein et al., 2006). Besides their nationally based legislation, some European mountain countries also practise “soft” law or differently formulated international law with non-binding or weakly binding force. Both “hard” and “soft” law initiatives are going to be presented in the following paragraphs.

Italy is one of the first countries that has developed legislation on mountain areas and is a unique example of where mountain areas are addressed in a constitution (Price, Jansky, Iatsenia, 2004). Namely, the Constitution from 1947 was an initiating act, further followed by Act 991 on Woods, Forests and Mountain Areas (from 1952); Act 1102 on Enacting New Provisions on Mountain Areas (from 1971, amended in 1990); Act 93 on Providing Financing for Mountain Communities (from 1981); and Act 142 on Local Authorities (from 1990, amended in 1999) (Castelein et al., 2006). Owing to its administrative-political division, regions in Italy can act under their own legislative power, which has resulted in a whole range of mountain laws in the following regions: Abruzzo, Basilicata, Calabria, Friuli-Venezia-Giulia, Lazio, Liguria, Lombardy, Marche, Molise, Piedmont, Tuscany and Umbria (Ibid.). Here, legislative acts are used by regional government in order to establish mountain areas and, according to this, mountain municipalities.

Switzerland is another country where mountain areas have particular status in legislation. Again, mountain areas are in the focus of more than one legislative act in Switzerland, at both federal and cantonal levels: Act 836.1 on Federal Family Allowances in Agriculture (1952); Act 844 on Federal Mountain Region Housing Improvement (1970); the Federal Act Aid for Investment in Mountain Regions (1997, amended in 2003); an Order on the Registry of Agricultural Production and Zoning (1998, defined mountain areas), etc. (Castelein et al., 2006).

Another example of ordinance adopted with concerns on mountain area development is Mountain Ordinance in Austria, passed at federal (national) level. The primary purpose of this was to define what is considered as a “mountain farm” thus creating the foundation for the establishment of Mountain Farm Cadastre Zoning (Lebensministerium AT, 2008).

The legislation on mountain issues in France is widely comprehensive and developed. Starting in 1985 with the adoption of Act 85-30 on Mountain Development and Protection, the chain

has been followed by a range of legislative acts on mountain issues (e.g. Decree 85-995 on the Membership and the Operation of the Committees Covering the Mountain Ranges in France; Decree 85-994 on the Membership and Operation of the National Mountain Board; Decree 2000-1231 on the Use of the Term “Mountain”; and Decree 2004-69 on Delimiting Mountain Ranges, etc.). Moreover, the Mountain Act is stipulated with other legal acts such as the General Local Authorities Code; the Rural Code; the Environment Code; the Forestry Code; the Town Planning Code; and Act 95-115 on Governing Spatial Planning and Local Development [Castelein et al., 2006].

Greece passed a Law on Encouraging the Economy and the Development of Mountain Regions in 1990 (amended in 1994); legislation has been in place in Bulgaria since 1993, reflected in the Bill on the Development of Mountain Regions, later followed by the Agricultural Producer’s Protection Act, the Farmer Support Act and the Protected Areas Act. Moreover, Act 56/95-VR on the Status of Human Mountain Settlements, from 1995, later on amended in 2000, represents a legislative basis with regard to mountains in Ukraine. As the title suggests, the Act focuses on mountain areas in particular; though, it focuses on mountain populations as well. Finally, a decision on defining criteria for the delimitation of mountain areas in Romania⁵³ was adopted in 2002, followed by the Act on Mountains and an Order on the Approval of the Delimitation of Mountain Towns, Capitals and Municipalities in 2004 [Castelein et al., 2006]. In 2000, the National Assembly of Romania adopted a law for the sub-national level – the Apuseni Mountain (EC, 2004), thus showing that mountain areas can be treated regionally even though regions do not have legislative jurisdictions.

For purpose of this dissertation, an analysis was carried out as to which legislative acts in Serbia tackle issues of mountain development. Legislative acts with regard to all relevant issues were embraced in this analysis – cultural heritage⁵⁴, natural heritage and the environment⁵⁵, water management⁵⁶, forest management⁵⁷, housing⁵⁸, agriculture⁵⁹, mining⁶⁰ and infrastructure⁶¹ – and the results show that mountains and mountain areas are loosely addressed only in the Law on Tourism (2005), the Law on Agriculture and Rural Development (2009) and the Law on

⁵³ Decision 949/2002 on the Adoption of Criteria for Delimiting Mountain Zones.

⁵⁴ Law on Culture (2009); the Law on Confirmation of the Convention on the Protection and Promotion of the Diversity of Cultural Expressions (2009); the Law on Confirmation of the Convention on Safeguarding of Intangible Cultural Heritage (2010); the Law on Confirmation of Framework Convention on the Value of Cultural Heritage for Society (2010).

⁵⁵ Law on Confirmation of the Bern Convention on the Conservation of European Wildlife and Natural Habitats (2007); the Law on Nature Protection (2009).

⁵⁶ Law on Water Management (2010).

⁵⁷ Forest Law (2010).

⁵⁸ Law on Social Housing (2009).

⁵⁹ Law on Agricultural Land (2006); the Law on Agriculture and Rural Development (2009); the Law on Recognition of Agricultural Species (2010); the Law on Consultancy and Expertise Work in the Field of Agriculture (2010); the Law on Organic Production (2010).

⁶⁰ The Law on Mining (1995), amended in 2009.

⁶¹ The Law on Public Roads (2005), amended in 2007; the Law on Confirmation of Financial Agreement between the Republic of Serbia and the European Investment Bank “Loan for Local and Regional Infrastructure B” (2009); Law on Confirmation of Agreement on Donation (Exemptions of Infrastructural Projects on Local Level) within the IPA 2008 Multi-User Program between the European Investment Bank and the Republic of Serbia (2010).

Nature Protection (2009). The Law on Tourism (2005) advocates mountain tourism as equally treated with other types of tourism, announcing preparation of the Programme on the Development of Tourism Product. The Programme is defined as a planning document with the aim of closely determining the priorities and development for each type of tourism specified by the Tourism Development Strategy (2005). The second example - the Law on Agriculture and Rural Development (2009) - even though not specifically referring to any type of area, declares measures that strongly depend on the difficulty level for agricultural activities and clearly assigns higher difficulty to mountain areas. Finally, the Law on Nature Protection (2009) mentions high-mountains in the context of highly valuable ecosystems.

With regard to international legislation, two conventions on mountain areas in Europe have been adopted: Alpine and Carpathian, the first of which is legally binding and the second of which is still in the form of soft legislation. In both cases, the conventions are the product of international cooperation, where Alpine countries initiated its establishment in 1991 after it became a paradigm for other mountain ranges in Europe and in the world. The Alpine Convention (1991) obliged its member states to practically implement responses through protocols which are to be proposed and adopted at regular meetings of the parties (Conference of the Contracting Parties) – held every two years – or at extraordinary meetings. Until 2011, ten protocols were developed, covering the following topics (Permanent Secretariat of the Alpine Convention [PSAC], 2010): agriculture (Protocol on Mountain Farming), forestry (Protocol on Mountain Forests), land use planning (Protocol on Spatial Planning and Sustainable Development; Protocol on Transport), protection and landscapes (Protocol on Conservation of Nature and the Landscape Protection; Protocol on Soil Conservation; Protocol on Energy), leisure activities (Protocol on Tourism) and technical regulations between parties (Protocol on Solution of Mitigations; and Protocol on Adherence of the Principality of Monaco to the Alpine Convention). The following protocols are expected to be oriented towards environmental protection: Protocol on Air Quality; Protocol on Water; Protocol on Waste Management (FAO, 2002). In addition, the cooperation has resulted in two declarations: Declaration on Population and Culture; and Declaration on Climate Change (PSAC, 2010).

The other convention – the Carpathian Convention was initiated by Ukraine in 2001 and adopted in 2003 (Castelein, et al, 2006) by the following parties: Czech Republic, Hungary, Poland, Romania, Slovakia, Ukraine and Serbia. In 2006 it was ratified by four parties (Czech Republic, Slovakia, Ukraine and Hungary) and since then it has been in effect. So far, only one protocol has been adopted – the Protocol on Conservation and Sustainable Biological and Landscape Diversity (Carpathian Convention webpage, 2011a). According to the protocol's content and other documents issued as a result of the Carpathian Convention, the focus is rather on environmental and natural protection than economic development. One of the reasons is certainly a statement given in the Convention (www.carpathianconvention.org, June 2013): "Carpathians are ... Europe's largest area of virgin forests". However, Serbia has nationally ratified (in 2013) only the Biodiversity Protocol issued in 2008, although it still has not entered into force; the other two prepared protocols - the Forest Protocol issued in 2011 and the Tourism Protocol issued in 2011 are waiting for ratification (Carpathian Convention

webpage, 2011a). The Forest Protocol and the Tourism Protocol are not ratified by other member states of the Carpathian convention, but Serbia is the only country for which the Biodiversity Protocol has still not entered into force (Ibid.). In general, Serbia and Ukraine, as non EU members, are lagging behind the activities in other Carpathian countries, which is reflected in the VASICA document where it is stated that there is “the need for integrating Ukraine and Serbia in a cross-sector approach” (Borsa et al., 2009, p. 150).

The Berchtesgaden Declaration on Mountain Range Regional Cooperation (2002) and The Declaration of Brig (2008) are examples of international “soft law”, in which there are a whole variety of participants – institutes, universities, unions, agencies, local authorities, international organisations (e.g. United Nations Environment Programme - UNEP), NGOs, federal and regional ministries (e.g. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety – Germany; the Federal Ministry for Consumer Protection, Food and Agriculture – Germany; Bavarian State Ministry of Regional Development and Environmental Affairs), national park representatives, etc. (BDMRRC, 2002; Euromontana, 2011). The international conference: The Alpine Experiences (The Berchtesgaden Declaration) aimed to summarise the experiences of the Alpine Convention, as the only legally binding inter-governmental mountain agreement in the world and to develop a universal set of principles and actions that can be useful in development in any other mountain region. Similarly, Euromontana’s conference: How to Generate Added Value from Europe’s Mountains specifically targeted mountain areas, trying to bring a set of recommendations for “turning our challenges into opportunities” (www.euromontana.org, August 2011). There is no Serbian institution or organisation that had attended conferences focused on the development of mountain areas; therefore, declaration as an instrument of soft law has not yet found place as an effort to support mountains and mountain populations.

So, to summarize, Alpine countries - Austria, Italy, France and Switzerland - have already had embedded practice in legislation on mountain areas for a few decades, while South-Eastern and Eastern European countries – Bulgaria, Greece, Romania and Ukraine have started more recently. In the initial phase of focusing on its mountain areas, Serbia has not developed any national legislation. The only form of explicitly addressing mountain areas is Serbia’s participation in the Carpathian Convention, where it is, however, still lagging behind other country members concerning ratification and putting protocols in force. The most common topic regulated by legislation in the European mountain countries analysed is the delimitation of mountain areas, although there are also topics addressing problematic issues in mountain areas such as development, forest and nature protection, agricultural production, housing improvement, mountain regions institutions and devolvement of responsibilities at regional and local level. Besides at an international and national level, some regions in Italy have and use the possibility of enacting the legislation at a sub-national level.

5.1.2 Institution-Building in Mountain Areas – Explicit Treatment Requires Explicit Actors

Besides legislation, some European mountain countries establish bodies and/or institutions to deal with this precise topic. Those bodies and institutions can represent different sectors (public, private and civil) and different tiers (international, national, regional and local). The

following paragraphs will give an overview of the institution-building in selected mountain countries, also referring to the existing model in Serbia.

Italy, France and Switzerland have created an international network in which their state, scientific, development and NGO institutions and organisations have membership (Euromontana, 2011, Mountain Forum webpage, 2011). Romania is following them with a slightly smaller number and less diversity of institutions. However, Serbia belongs to another group with Germany, Bulgaria and Ukraine where only a few institutions are part of the international network. Namely, no Serbian institution or organisation is actively involved in Euromontana (Euromontana, 2011) and only a few non-governmental organisations are engaged in the Mountain Forum network, but these are locally focused (e.g. Association of Young Researchers Bor) or not specifically oriented to mountain areas (e.g. Environmental Ambassadors) (Mountain Forum webpage, 2011). This indicates that beneficial international networking in Serbia is not supported by the public and the scientific/academic sector, but basically limited to sporadic engagement implicate to mountain areas.

In the Act on Mountains, mountain areas and municipalities in France are defined, as well as six mountain ranges – Central Massif, Alps, Corsica, Pyrenees, Jura and Vosges. In order to implement the Act and mountain policies, an institutional framework for mountain areas has been established, consisting of National Mountain Board and Range Committees, presided over by the prime minister and regional prefects respectively (FAO, 2002; Price, Jansky, Iatsenia, 2004; Castelein et al., 2006). It is similar in Bulgaria where the Bill on Mountain Areas declares the establishment of a National Board for Mountain Regions, instituted within the Council of Ministers, as the main body to define policies, coordinate the actions delegated to regional and local authorities and monitor the implementation of the law on mountain areas (FAO, 2002; Castelein et al., 2006). In France, the members of both the National Mountain Board and Range Committees are governmental representatives and a wide range of stakeholders – from farmers to experts and professionals. In this case, the task of the National Board is to set objectives and establish actions for the development, management and protection of mountain areas, make decision on aids and grants and be a consultant in setting priorities (Castelein et al., 2006). Range committees also set objectives to be integrated in interregional development plans (Ibid.). In cases where ranges are split between regions, cooperation is established among all of them. Thus regional cooperation is being improved. Since 2005, law permits the establishment of regional-level mountain range accords in order to facilitate mountain range policies (Ibid.).

In the case of Romania, a Mountain Act defines and differentiates the completely mountainous and partially mountainous areas to be considered, treated and developed under the institutional framework of two national, one regional body and possibly more local associations (Castelein et al., 2006). Namely, the central institution for the coordination of mountain development in Romania is the National Agency for Mountain Regions, established within the Ministry of Agriculture, Forestry and Rural Development. Besides the National Agency for Mountain Regions, each mountain region (city, commune or municipality) is obliged by the Mountain Act to establish a regional institution responsible for implementing development

programs and encouraging regional relations by cooperating with other mountain regions. In Ukraine, the national government and the Council of Ministers are in charge of defining settlements that are mountainous and further on sharing responsibilities on different topics: the government focuses on policies for education, socio-economic development and use of natural resources, while the Council of Ministers deals with agriculture, forestry, soil improvement, urbanisation, tourism, natural, cultural heritage and public transport.

As Austria became eligible to use EU structural funds within Common Agricultural Policy by accessing the European Union in 1995, the Less Favoured Mountain scheme has been developed (Lebensministerium AT, 2008), also covering mountain areas that have benefited from direct compensatory allowances (Hovorka, Dax, 2007). Therefore, besides the national and regional funds for support on mountain areas (Lebensministerium, 2008), Austria has also established a national Institute for Less Favoured Areas and Mountain Areas, situated in Vienna (Hovorka, 2002), thus involving the scientific sector and research in addressing its mountain areas.

To support and implement principles from the presented set of legislation, Switzerland has not established specific institutions. It is the same in Serbia, but with the major difference that only one institution - the Ministry of Agriculture, Forestry and Water Management – tackles their problems and they do this implicitly. While responsibilities towards mountain areas and people in Switzerland are distributed within various bodies at both national (federation) and regional (cantons) levels (Castelein et al., 2006), the Ministry in Serbia is in charge of annually declaring marginal areas eligible for the support and the amount of the support on an annual basis (Law on Agriculture and Rural Development, 2009), but with no explicit focus on mountain areas.

Besides governmental institutions, actions of great significance in Switzerland are taken by two NGOs: the Swiss Mountain Regions Organisation, founded in 1943, and Swiss Aid to Mountain People Association, in existence since 1952 (Price, Jansky, Iatsenia, 2004). The significance those organisations have in mountain development is reflected in their participation and advisory activity in preparing proposals with the government and parliament, and they inform the public about decisions, actions, and results, etc. (Castelein et al., 2006). Based on this example, the Romanian government has encouraged the establishment of a national NGO and taken an active role in contributing to the organisation's budget (Ibid.). In Serbia, NGOs on mountain problems are not supported or subsidized, so there is no explicitly mountain oriented NGO at a national level, but only sporadic organisations of enthusiastic inhabitants of certain mountains (such as Planinska zajednica stanovnika Golije/The Mountain Community of Golija Mountain Residents and Centar za razvoj Golije/Golija Development Center).

One of the mandatory responsibilities of municipalities in Italy is to establish mountain communes – local entities autonomous from administrative and political matters (Castelein et al., 2006). The establishment of such entities is for them to be an instrument to promote and ensure particularly the principles of subsidiarity and local cooperation. The organs of the communities are: a body consisting of representatives of each member municipality and an executive body. Their tasks are to implement socio-economic development plans, implement

other short- or mid-term actions and provide an information office for the local inhabitants (FAO, 2002).

The spatial plans of areas of special use, Vlasina (2004), Stara Planina (2008) and Kopaonik (2009), impose the establishment of councils to be responsible for coordination and implementation of the plans. The councils should involve the national government and representatives of municipalities within the boundaries of the plan; however, their establishment is not recorded.

Examples found in the literature analysed show that institutionalisation of mountain areas ranges from specialised national, regional and municipal bodies, over research institutes, to NGOs. In Serbia most of these institutions are not established; only locally targeted NGOs and implicit focus of the Ministry of Agriculture, Forestry and Water Management address (some) Serbian mountain areas. However, efforts to include different stakeholders, experts and the local population in the work of public institutions is lacking in Serbia when compared to Austria, France and Switzerland. Finally, in terms of cooperation between mountain regions and municipalities, Serbia has no regulations, while it is highly advocated in France and even obligatory in Italy.

5.1.3 Financial Management of Mountain Areas – Bringing Measures into Actions

Both Romania and Ukraine have explicit legislation and Romania has even established a national body for mountain areas. However, neither of those countries has established a specialised national mountain fund. Even so, the Romanian government uses its national budget to donate to the NGO - the Training and Innovation Centre for the Development of the Carpathians – in order to ensure its operation [Castelein et al., 2006].

The financial management of Serbian mountain areas is closest to the Romanian and Ukrainian system, but still with the significant difference of having neither legislation nor institutions on this matter. The actions of the Serbian government are being placed ad hoc⁶² thus indicating that financial resources are used “spontaneously”. This is the case with actions in Serbian mountain areas as well. Under these circumstances, mountain areas together with other topics do not have a planned and predictable budget. The closest treatment of mountain areas in Serbia is recorded in the activities of the Ministry of Agriculture, Forestry and Water Management⁶³: support to mountain farmers is equal in type and amount as to farmers in other areas with the difference that percentage to be given in return is lower. On the one hand, this proves that problems in mountain areas are not explicitly treated either in responses or financially. In addition, the Regional Development Strategy (2005), a strategic document used by the Ministry, approves a budget particularly aimed at agricultural programs in hilly and mountain areas; nevertheless, a precise definition on areas which are to be considered mountainous is not given and a fund has not been established yet. The actual trend is that

⁶² Based on an interview with the Implementation Team for the Poverty Reduction Strategy of Serbia: Social Inclusion Deputy Team Manager and Coordinator for Economic Development and Employment (conducted in June 2009).

⁶³ Based on an interview with the Consultant for rural development, Sector for Rural Development, Ministry of Agriculture, Forestry and Water Management (June 2009).

support for rural area development from national funds has been reduced in recent years, but has not yet been adjusted with support from EU funds (Nikolić, Popović and Petrić, 2009).

France had a Fund for Mountain Self-Development since 1985, but in 1995 it was integrated in the National Physical Planning and Development Fund, meant to financially support physical planning, restoration of mining sites and mountain development (Food and Agriculture Organisation [FAO], 2002; Castelein et al., 2006). Actually, the National Board in France has the task of being a consultant in setting priorities by setting objectives and establishing actions for the development, management and protection of mountain areas and accordingly making decisions on aid and grants (Castelein et al., 2006).

In contrast to Romania and Ukraine, Italy, Austria, Switzerland and Bulgaria have established national funds explicate to mountain areas. Thus, in order to ensure funded principles and goals, the Italian central government set up the National Mountain Fund from which resources are further distributed to mountain regions and provinces that decide on its use (FAO, 2002; Castelein et al., 2006). Even before accession to the EU, the Austrian government had created a national fund in order to support mountain farming as one of its national priorities (Hovorka, 2001 and 2002; Hovorka, Dax, 2007). Allowances from the national fund were used as direct aid to farmers in mountain areas (Ibid.). After accession to the EU, Austria also became eligible to use EU structural funds within Common Agricultural Policy in 1995, from which the Less Favoured Mountain scheme was developed (Lebensministerium AT, 2008), again covering mountain areas which have benefited from direct compensatory allowances (Hovorka, Dax, 2007), even to a larger extent than before accession (Hovorka, 2002). In Switzerland, a special mountain fund has been created, comprising contributions from federal, cantonal and local levels and from interest on loan repayments (FAO, 2002; Castelein et al., 2006). The cantons are in charge of implementing the law and allocating resources from the mountain fund, while the federation monitors these processes (Ibid.). Finally, in Bulgaria, the National Board for Mountain Regions advocates that part of the state budget is to be used for the Special Fund for the Development of Mountain Regions (FAO, 2002). The resources of the fund are used for implementation of legislation on mountain areas and to enable local authorities to implement their development projects that they are in charge of (FAO, 2002; Castelein et al., 2006).

Besides the listed national funds, European mountain countries, which are at the same time members of the EU, also use EU structural funds in order to support their mountain areas. At a regional and local level (in EU countries) development of less favoured mountain areas significantly relies on the European Agricultural Fund for Rural Development (EAFRD) as well as on the other structural funds applicable to mountain areas, which unfortunately is not an option for Serbia. Nevertheless, Serbia is eligible to use some EU structural funds: there were programs such as ISPA (Instrument for Structural Policies for Pre-Accession) and SAPARD (Social Accession Programme for Agriculture and Rural Development) before 2007, which have since been replaced with the IPA programme (Instrument for Pre-Accession Assistance), but those resources are not necessarily used for mountain areas.

Another international fund with regard to mountain areas is the fund that Alpine Convention member states established in order to implement the Alpine Convention (Alpine Convention

webpage, 2011b). Since the services of institutions that look after member state cooperation cost, additional resources for protocol implementation are donated by organisations such as EURAC – European Academy in Bolzano, Swiss Development Cooperation (The Carpathian Convention webpage, 2011b), private foundations such as Prince Albert II of Monaco Foundation (Alpine Convention webpage), etc. The funding concept for the Carpathian Convention is the same, but stating the situation particularly for Serbia, it first needs to financially support its membership in order to use the mutual fund (Carpathian Convention webpage, 2011b).

So, most of the countries that first established legislation on mountain areas also developed specific national funds to support the responses to that legislation. Those are Italy, Austria, Switzerland and Bulgaria. France is an example where its mountain fund is integrated with funds for mining and spatial planning, while Serbia belongs to the group of countries with no specific mountain fund – with Romania and Ukraine. Alpine countries (members of the Alpine Convention) have successfully proved that establishment of an international fund is possible.

5.1.4 Strategic and Spatial Planning on Mountain Areas – Creating a Vision for Mountain Area Development

Addressing specific characteristics and problems in mountain areas has already been a concern of European international focus for a while. Documents such as the Guiding Principles of Sustainable Spatial Development of the European Continent (CEMAT, 2000) and Spatial Planning and Regional Development in the Alpine Region (European Commission, 2000) are examples of international cooperation on mountain areas. The first one, the Guiding Principles is a document concerned with not only mountains but overall European space. Anyhow, this document refers specifically to mountain areas in one of its chapters, thus stressing relevance in their particular treatment. The Spatial Planning and Regional Development in the Alpine Region is a result of cooperation between Alpine Convention member countries and a document also based on a recommendatory and international approach, but in addition focusing specifically on mountain areas.

On a national scale, the experiences of European mountain countries such as Germany, Austria and Serbia are rather different. While the spatial development concept in Germany is not specifically oriented to mountain issues, it still defines the distribution of necessary facilities in settlements at a very local level, taking particular care of inhabitants in small settlements which most mountain villages are. This is the concept of decentralised concentration (Domhardt, Troeger-Weiß, 2009), explained in more detail later on. In Austria, mountain area development has been significantly led by programmes. Founded by the Austrian national government, at the beginning of the 1970s, the Mountain Farmers' Special Programme was established to support mountain farming (Hovorka, 2001 and 2002; Hovorka, Dax, 2007). The focus of this programme was not only to support agricultural activity and production, but also to improve the social situation in households and enforce their role in the regional context (Hovorka, 2001 and 2002). Besides this, the national government was aiming to improve mountain activities – agriculture, grazing, forestry, tourism – and, at the same time, to ensure overall environmental stability (Hovorka, 2001; Hovorka, Dax, 2007; Lebensministerium AT, 2008). Later on, the Austrian

national government also developed the Programme for Rural Development and Agro-Environmental Programme (Hovorka, 2001; Lebensministerium, 2008; Hovorka and Dax, 2009) which constitute the highest allowances for mountain areas (Hovorka, 2001 and 2002), therefore playing an important role in their development.

In comparison to the programmes in Austria, which are explicitly focused on mountain areas and are precise on expenditures and how those expenditures are dispersed throughout a four year period, programs on rural development in Serbia tackle its mountain areas implicitly and in addition they are prepared on an annual basis⁶⁴ where one year of implementation is not long enough for evaluation of results. Thus, each following programme cannot improve according to the gaps left by the previous one. Actually, comprehensive (including more than the agricultural aspect) programming of mountain area development in Serbia does not exist. According to interviews with the Social Inclusion Deputy Team Manager and Deputy Prime Minister's Poverty Reduction Strategy Implementation Focal Point (Implementation Team for Poverty Reduction Strategy of Serbia), programming is not yet enforced.

According to an interview with the Social Inclusion Deputy Team Manager, the national government and ministries act in rather an ad hoc manner because the ministries' budgets are still cumulative so that it is not clear which amount of financial support is required by which project. Also, the interview pointed out that development of monitoring indicators is very slow and still in the phase of pilot projects in spite of a new approach in strategic planning (fact based planning, cooperation with NGOs, monitoring indicators and coordination).

Spatial planning in Serbia represents a comprehensive platform, dealing not solely with land-use issues but also integrating all relevant aspects of development: nature, culture, environment, population, settlements, economy, infrastructure, etc. It is about long-term planning (10-20 year time horizon), although spatial plans also include mid-term programmes for the first phase of their implementation. Starting from a visionary view of the future, spatial plans concretise actions, linking them to locations and finally operationalizing the actions of highest priority. In comparison to a former spatial plan from 1996, a separate chapter on high-mountain areas in the Spatial Plan from 2010 represents a significant step forward in planning for their development. In that particular chapter as well as throughout the document, mountain areas are emphasised as areas with a higher extent of problems and as leading areas in terms of their natural value and potential. However, by limiting the particular chapter to high mountain areas (above 1000 m), pertinent issues are those of nature protection and ski tourism destinations rather than permanently inhabited settlements which spread predominantly at lower altitudes.

Based on existing national programmes and the overall endogenous mountain policy of the Austrian government (Initiative for Endogenous Regional Development in 1985) (Dax, Hovorka,

⁶⁴ Based on an interview with the Social Inclusion Deputy Team Manager - Deputy Prime Minister's Poverty Reduction Strategy Implementation Focal Point; and the Coordinator for Economic Development and Employment - Deputy Prime Minister's Poverty Reduction Strategy Implementation Focal Point (conducted in June 2009); and the Consultant for Rural development, Sector for Rural Development, Ministry of Agriculture, Forestry and Water Management (conducted in June 2009).

2000; Dax 2001), it was considerably important to develop corresponding programmes at a provincial (regional) and local level (Hovorka, 2001). Namely, federal structure demands responses at a regional level and bottom-up based endogenous development requires active participation of the local authorities and local population in order to provide responses and actions on a “small geographical scale” (Dax, 2001). With regard to this, the provinces have developed their own programmes and campaigns and local communities have become experienced in developing local development strategies. For example, the province of Upper Austria has been developing and updating the principles of village renewal strategies since 1984 (Pröll, 2010; Raumordnung Niederösterreich, 2010), and sustainable strategies within the framework of Local Agenda 21 since the 1990s (Linzer, 2010). Both require awareness of the local population on the capacities and future vision of their villages (“when people identify with the context they live in”) (Ibid.), as well as a high level of cooperation between various stakeholders – horizontal and vertical (Hovorka, 2001; Dax 2001). Switzerland is another example where the local communities and local population (including mountain municipalities) have taken part in creating strategies together. Projects on building a local ski resort and museum of local traditions have been created by local community initiatives, but further realized by private and individual groups in order to obtain optimal financial support (Mühlinghaus, Wälty, 2001).

Another example is France where projects are also developed in cooperation between several municipalities, based on their common interests. An umbrella under which a set of such projects has been created is called “together, let’s design tomorrow’s valley”, based on principles of sustainable development (The SIVOM of the Haute Vallee de l’Arve). Projects under this umbrella have been supported by regional and local communities, shown to be one of the options.

The other possibility is potentially available to all EU members as well some accession countries. In fact, programs like LEADER and INTERREG support local community initiatives and projects, differentiating one from another in a way that first focuses on rural development and second on trans-regional and trans-national cooperation (Dax, 2004). Those initiatives have been applied in many mountain areas of Austria (Hovorka, 2001), supporting cooperation and networking, raising the awareness of the local population, diversification and strengthening of regions, protection of natural and cultural heritage.

Regional and local development in Serbia is embedded in regional spatial plans and spatial plans of areas for special use. As is the case with the national spatial plan, regional spatial plans are also integral documents. There are three regional plans that include whole or parts of Serbian mountain areas adopted by the Government of Serbia before 2012: the Regional Spatial Plan for Kolubara County Hit by the Earthquake (2002); the Regional Spatial Plan for South Pomoravlje (2010); and the Regional Spatial Plan for Timočka Krajina (2011). None of those puts mountain areas or mountains in a separate chapter, although mountains are referred to in the text mainly related to tourism or agriculture.

Strategic planning for mountain areas in Serbia is not yet in existence either at a national or local level. However, initiating steps towards a more systematised approach can be recognised

in the Rural Development Strategy (2009) and Tourism Development Strategy (2005). In the former case, based on a cluster analysis of 40 indicators, the Strategy distinguishes four types of rural regions in Serbia: regions of high-productive agriculture and integrated economy; regions where the economy is typical for smaller urban areas and agriculture where the work force is used intensively; regions where the economy is based on natural resources – prevaillingly mountain areas; and regions with large tourism capacities and bad agricultural structure. Clearly, one of the regions is characterised as mainly mountainous, nevertheless, the last three listed regions also include mountain areas. This shows sectoral treatment of mountain areas where responses are not created distinguishing them from other areas. As a part of the Tourism Development Strategy (2005) it is suggested that separate strategies should be developed for different tourist destinations, clusters or products. The fact is that this suggestion has still not been realised in practice; even if it were, thematic and spatial limitation would not fulfil the expectations for a comprehensive approach to mountain areas.

Finally, planning at a local level or at the level of a mountain exists in Serbia in the form of spatial plans for areas of special use. The plans cover only mountains or mountain protected areas which the government considers of special interest to develop; thus not covering complete mountain areas and again excluding mountain populations that do not inhabit areas seen as a priority in development. In recent years their number has been expanding progressively: eight are already adopted (for Vlasina (2007), Golija Nature Park (2009), Tara National Park (2009), Stara Planina Nature Park (2009), Stari Ras with Sopoćani (2009), Kopaonik National Park (2009), Uvac Special Nature Reserve (2010) and Suva Planina Mountain (2010)), while there are a few in the process of adoption. Mid-term programmes and implementation plans are components of the spatial plans, where priority actions are defined together with institutions responsible for the implementation and estimation of the budget needed for it. Nevertheless, spatial plans can be adopted before all responsible parties sign the agreement which practically diminishes the value of the responses and measures taken in response to its recommendations.

Explicit targeting of mountain areas in European planning and strategic documents exists at various levels: from international to local. Some of them use particular chapters to refer to mountains and/or mountain areas, while others are entirely devoted to the topic. However, in each case their role is to support mountain development in mid-term and long-term time horizons. In Serbia, the first document has recently been established – the Spatial Plan of the Republic of Serbia (2010) - that addresses high mountains in a particular section, but still excludes areas below 1,500 m. A relevant difference between the analysed Alpine countries and Serbia is at the local level, where the former group of countries involve the local population in the strategy creation process, while Serbia does not. More on this topic is going to be presented in the following section.

5.1.5 Local Population Participation and Local Initiatives – Activation of the Local Community, Resources and Raising of Identity

Besides the inevitable top-down approach, some European mountain countries give complementary relevance to the bottom-up approach, engaging the local population in

decision-making that particularly concerns the economy and development of their own community. “Local initiatives are defined as innovative and collaborative activities that take place under local control and for the benefit of the local population. They are a form of direct participation, as local residents themselves become actors and initiators of projects” (Mühlinghaus, Wälty, 2001, p. 237).

“Endogenous” is defined as something that originates or naturally occur in a particular place – native (Oxford Dictionaries, 2011) – and mountain areas that have already applied this principle tend to base their development on enforcing traditional activities, skills and landscape. This concept was intensively introduced in Switzerland in 1970 (Mühlinghaus, Wälty, 2001) and has been involved in planning in Austria since 1985 under the title Initiative for Endogenous Regional Development (Dax, Hovorka, 2000; Dax 2001). Even nowadays, the practice of direct participation is present in most Alpine countries, supported by Italian, French and Swiss legislative acts on mountain areas and additionally practised in Germany and Austria.

The Rhön Biosphere Reserve in Germany is an example of where actors from different sectors – public, private and NGOs – have successfully combined the top-down and bottom-up approach. Similar to the concept of endogenous development, the local population created a strategy based on regional and local resources (Robinson and Keenan, 2010). Besides participation in planning, local stakeholders were also in charge of controlling the strategy implementation by adapting their own actions to strategic goals (Ibid.).

Due to the general intention of providing responses on a “small geographical scale” (Dax, 2001), provinces in Austria have developed their own campaigns and local communities have become experienced in developing local development strategies. For example, the province of Upper Austria has been developing and updating principles of village renewal strategies since 1984 (Pröll, 2010; Raumordnung Niederösterreich, 2010) and sustainable strategies within the framework of Local Agenda 21 since the 1990s (Linzer, 2010). Linzer (2010) stated that this approach requires awareness of the local population on the capacities and future vision of their villages, as well as a high level of cooperation between various stakeholders – horizontal and vertical (Hovorka, 2001; Dax 2001).

However, the direct democracy pattern and direct participation of individuals can be seen as most embedded in Switzerland. Namely, direct democracy allows an individual to influence even legislative acts at all federal, cantonal and communal levels (Swissinfo.ch, 2007). Since the 1970s, the Swiss governments has taken care for policies to be based on the identities and needs of the local population; therefore, the “voice” from communities at a local geographical level and promotion of the “bottom-up” approach play a significant role (Dax, 2002; Castelein et al., 2006). Communities which are smaller in size can eligibly organise discussion and decision-making meetings annually or if they are larger then they establish a communal parliament (Swissinfo.ch, 2007; Switzerland’s Official Web Portal, 2011).

Participation in Serbia is restricted in comparison to the previous examples. Even though recent documents (e.g. the Spatial Plan of the Republic of Serbia) support the principle of

participation, it appears rather randomly and spontaneously in practice – depending on the individual enthusiasm of the project coordinators.

The other possibility available to EU member countries is the LEADER and INTERREG programmes. In fact, programs like LEADER and INTERREG support local community initiatives and projects, differentiating one from another in the way that the first focuses on rural development and the second on trans-regional and trans-national cooperation (Dax, 2004). Those initiatives have been applied in many mountain areas of Austria (Hovorka, 2001), supporting cooperation and networking, raising the awareness of the local population, diversification and strengthening of regions, the protection of natural and cultural heritage.

The Government of the Republic of Serbia has recently started a practice of incorporating NGOs in the creation of the Poverty Reduction Strategy (2003), thus giving an effort to reach the “voice” of the final users. The procedure was to involve local NGOs in Serbia in order to collect information from direct communication with local residents and then transfer the results to the Government.⁶⁵ Even though the approach represents a significant step forwards in future planning in Serbia, it is no guarantee that the method is embedded in regular and overall practice - no document suggests it as mandatory yet. However, declaration and practice based on the Law on Planning and Construction (2009) shows the procedure embedded in the field of planning. Namely, by this act, public participation is guaranteed in the form of being able to respond to the public exhibition of a planning document for a period of 30 days. This procedure follows after expert control, by which inclusion of stakeholders is marginalised. Besides this, a considerable contribution on this matter is embedded in the facultative engagement of spatial planners in direct communication with the local population in the first phase of plan preparation. This is also a non-mandatory response, but one which is the most direct and has the highest involvement level of final users in development planning. In addition, the Serbian Tourism Development Strategy (2005) declares the creation of master plans for destinations attractive for foreign investments, which are to be followed by projects as detailed elaboration of the master plans. However, this document does not define or mention if and how there is any participation of the local population.

As mentioned already, there are local projects in Serbian mountain areas, but they are often not the result of local initiatives. Namely, the Šarganska osmica (the Šargan Eight) - gauge railway renewal project - is the only project that this research came across for being created and implemented thanks to a group of local people. Other projects taken into account here – Drvengrad ethno village (Lojanica, 2008) and second-home initiative (Dulanović, 2009) – are the creation of one private stakeholder and investors whose residency is outside of the area where the project was implemented. Thus, the examples are out of the frame of the endogenous concept.

⁶⁵ Based on an interview with the Manager Deputy in the Prime Minister’s Team for Implementation of Poverty Reduction Strategy and Focal Point for Social Policy and Vulnerable Groups; and the Coordinator for Economic Development and Employment, also part of the Team for Implementation of Poverty Reduction Strategy; and the President of Steering Committee – Amity NGO (both conducted in July 2009).

In summary, the bottom-up approach has considerably weaker support and application in Serbia than in some Alpine countries and their mountain areas. Participation of the local population, local initiatives and the endogenous concept has just been recently introduced in some national strategic documents and has the role of recommendation rather than mandatory action. This, together with financial weakness, brings the local population into a passive position with regard to participation, while outside investors use their chance to profit on resources in mountain areas.

5.2 Principles and Measures on Mountain Area Development and Management

This section aims to show what principles and measures are set by Alpine, Balkan Mountain Massif and Carpathian countries in order to address problems in their mountain areas. The structure of this section follows the categories of problems recognized and presented in the previous chapter: environmental, demographic, infrastructural, including problems of accessibility, economic and management problems.

5.2.1 *Environmental Protection*

Elements such as air, soil, water, flora and fauna are closely related and considerably dependent on one another. Therefore, most of the principles and measures on their protection integrate all those elements of the system by addressing the entire environment – in both natural and urbanised areas. The purpose of this section is to show the principles and measures promoted, declared and/or implemented with regard to environmental problems in Serbian and European mountain areas.

Tradition and culture are integral parts of a region's landscape, and mountain areas have been highly regarded due to their isolation that has preserved these valuable aspects more than in other areas. Therefore, the landscape identity preservation principle is highlighted in vast numbers of analysed documents: starting from European Spatial Development Perspectives (EC, 1999), Guiding Principles for Sustainable Spatial Development of the European Continent (CEMAT, 2000), Territorial Agenda (EU-MTD, 2007), then in international mountain focused documents such as Alpine (1991) and Carpathian Convention (2003), in national policies e.g. in Germany (Robinson and Keenan (2010), Austria (Hovorka 2001; Hovorka, Dax, 2007 and 2009) and in national legislation in Romania (Castelein et al., 2006) and France (Ibid.). The Law on Natural Protection (2009) in Serbia introduced the topic of regional types of landscapes recognising their cultural and natural values in heritage preservation, while an explicit focus on landscape identity has recently taken place in Serbian planning practice, being addressed in a separate chapter in the Spatial Plan of the Republic of Serbia (RASP, 2010).

Emerging impacts of climate change also reflect changes in the quality of air, soil and water. Since the trend of those changes is inevitable, international documents such as the Territorial Agenda (EU-MTD, 2007) and the Declaration of Brig (2008) call for rising awareness on the consequences of climate change. Namely, the Territorial Agenda, referring to mountains as areas with "specific geographic challenges and needs" (European Union Ministers Responsible for Territorial Development [EU-MTD], 2007, p. 3), and the Declaration of Brig (2008), which explicitly targets mountain areas, stress the relevance of risk management on climate change

and new land-management adapted according to recent trends in climate change. Even though the topic of climate change is included in the analytical part of the Spatial Plan of the Republic of Serbia (RASP, 2010), no particular implications of the changes in land-use management are addressed.

In order to protect the quality of the air, soil, water and biodiversity affected by intensive exploitation of natural resources, a vast amount of international documents (Guiding Principles (CEMAT, 2000), Territorial Agenda (EU-MTD, 2007), and Carpathian Convention (2003)) and the Spatial Plan of the Republic of Serbia (RASP, 2010) promote use of renewable energy. Nevertheless, Serbia appears to be at the very beginning of the process, therefore, besides hydro-energy, other types of energy such as bio-fuel, solar panels, geo-thermal energy and wind-energy are insignificantly used or not used at all. In contrast to Serbia, Austria is the leading European country in production of renewable energy, where hydro-power also plays a considerable role (EC, 2008) particularly related to its mountain areas.

Besides being in the two European mountain conventions (the Alpine (1991) and Carpathian (2003)), the polluter pays principle is presented in Serbian Law on Environmental Protection (2004, amended in 2009) and the National Strategy for Sustainable Development. If environmental elements have already gone through undesirable changes, those two mountain conventions also declare the principle of revitalisation, which is also stressed in the spatial plans for areas of special use in Serbia.

With regard to measures on air pollution, the Serbian National Assembly ratified the Law on Air Protection in 2009. The document points out the importance of monitoring air pollution and the development of a network of measurement stations. Some of the aims were realised in 2010 when the Agency for Environmental Protection of the Republic of Serbia managed to place a network of air quality laboratories and 37 automatic measurement points all over Serbia (staklenozvono.rs, 2010). The Law also points out the need for defining the levels of gas and soot emission allowed, but does not give precise measures against air pollution. How monitoring of pollution can be useful is testified to in the case of the Bavarian Alps where decades long multi-parameter measurements on water quality resulted in significant water quality improvement (Lenhart, 2011).

In Romania, farmers are offered incentives in order to adapt their practice so that soil degradation will be avoided. In contrast to the encouragement mentioned above, in France farmers need to pay taxes for erosion caused by exaggerated activity or improper use and in Italy this measure goes as far as the appropriation of misused land [Castelein et al., 2006].

In order to protect their environment – particularly from increasing freight transport - Switzerland and Austria have developed the densest network of railways in Europe, targeting redistribution of freight transport from roads to railway (Logistik-Kompetenz-Zentrum, 2007; Partners in Dialogue website, 2011). The project was named Alpine Freight Railway (Ibid.). The decision was made on the initiative of citizens and based on concerns about environmental protection (Rudel, Maggi, Tarola, 2004). Most Alpine countries have established a toll system for traffic on roads in order to cover expenditure for railway construction even to mountain

villages and also to discourage traffic on motorways. Each country has its own variation: from toll charges for all kinds of roads and for all types of vehicles (Switzerland), charges according to driven kilometres for freight transport (Slovenia, France and Italy) to charges for certain time-period regardless of kilometres driven (Switzerland and Austria) (PSAC, 2007). Thus tolls for the heaviest categories of lorries are charged the most because those vehicles are also greatest polluters (PSAC, 2007). The heaviest lorries are also forbidden on all other classes of roads apart from motorway, and restricted to working days and during daylight (PSAC, 2007). A motorway toll system also exists in Serbia, but its public company for road infrastructure claims that the annual income from tolls and other sources is not even sufficient for the construction and maintenance of the road infrastructure (Slivar, Tašković, 2011).

Based on the principle of prevention rather than rehabilitation, the Alpine Convention (1991) recommends building protection systems against natural hazards, but without unnecessary constructions and installations. The principle is also supported in national legislation in Bulgaria (development with the constant protection of natural resources such as forest, water and soil), Romania (protection against land degradation) and Serbia (advocated by the Law on Environmental Protection (2004, amended in 2009) and the Law on Natural Protection (2009)). The IVth World Congress on National Parks and Protected Areas in Caracas launched an objective for a “worldwide network of national parks and protected areas to cover 10 % of terrestrial eco-regions” (Whitehouse, 2001, p. 43), which was also accepted in the Spatial Plan of the Republic of Serbia (RASP, 2010).

Further, any activity established in the field of nature-friendly tourism, integrally supporting soil, water and biodiversity, is freed from tax for the first five years in Romania. In Serbia, Spatial plans for areas of special use target mountain populations in the form of reduced taxes for the treatment of waste, which is, unfortunately, not confirmed as practice according to the interviewed experts, planners, local authorities and local population. In the Alpine Convention (1991) delimitation of areas for urban sprawl and limitation of second homes were promoted in the in Alpine Convention (1991), which has developed into a national discussion in Switzerland (swissinfo.ch, 2012). Namely, in the context of the most attractive and inhabited mountain areas in Europe, buyers of second-home houses coming from outside of mountain villages and sometimes from other countries represent a threat to the local population because the construction of new houses means use of agricultural land and change in the traditional landscape.

Finally, in some countries the necessity for environmental impact assessment has been declared in order to ensure that the implementation of planning documents and projects will not harm the environment, including its natural, cultural and social components. The Declaration of Brig (2008) and the Carpathian Convention (2003) highlight the need for comprehensive impact assessment for policy proposals as well as for assessments to follow planning documents. Similarly, legislation in Serbia – the Law on Environment Impact Assessment (2004) and the Law on Strategic Environmental Impact Assessment (2004) – define documents that must be or can be followed by assessment. The first act refers to projects in the field of industry, mining, energy traffic, tourism, agriculture, forestry, water management and

waste disposal, which are expected to have considerable impact. Additionally, assessment is defined as unavoidable in projects taking place in naturally or culturally protected areas. In the case of the Law on Strategic Environmental Impact Assessment, the environmental impact assessment is predefined for developing plans and programs.

After all, it appears that Serbian legislative and spatial documents, although not explicitly directed to its mountain areas, declare and recommend similar principles on environmental problems to other European legislation and documents that consider mountain areas directly. However, those documents in Serbia have only been recently adopted, so they are still only on paper or the first steps have just been recently implemented. Therefore, other European mountain countries have elaborated and implemented their measures to a greater extent than Serbia.

5.2.2 Demographic Decline

It has been already shown that most of the problems related to demographic trends and structures are actually the consequence of intensive emigration from mountain areas. Thus, low population density, aged population structure, gender imbalance as well as low birth-rate and fertility rate make some (parts of) mountain areas demographically degraded. With regard to population and demographic trends, a goal set in the Spatial Plan of the Republic of Serbia (RASP, 2010) is to mitigate the negative tendencies and maintain simple reproduction (stationary population), while achieving more balanced territorial distribution of the population. In the following paragraphs the principles and measures that address those problems in Serbian and other European mountain areas will be shown.

Austria is one of the European mountain countries where the compensation principle is strongly reflected in the measures they set for their mountain areas; and Serbia follows this example, setting the same principle in the Spatial Plan of the Republic of Serbia (RASP, 2010). This refers to population in naturally protected areas that, due to restrictions in the course of protecting natural heritage, should be in return provided with certain forms of advantages. The national policy on mountain areas in Austria is a clear example of where geographically induced hindrances are compensated for financially in the form of direct support (Hovorka, 2001 and 2002; Hovorka, Dax, 2007). As mountain agriculture, in most cases, cannot achieve the same level of production as in other areas, the Austrian government has decided to compensate profitability to people living in mountains in order to prevent an exodus (Hovorka, 2001 and 2002; Hovorka, Dax, 2007; Lebensministerium AT, 2008). Based on this is the Law on Agriculture and Rural Development in Serbia that refers to specific support depending on the difficulty level: it suggests different amounts of financial support based on the difficulty level and circumstances of the areas. Also, spatial plans for areas of special use in Serbia target mountain populations in the form of loans and reduced taxes for agricultural activity, treatment of waste and renovation of buildings. The last measure – direct payments for house refurbishment – is also available in Switzerland (Castelein et al., 2006). However, no expert, government or local population interviewee has stated that those measures are practically applied in Serbia.

Further, reduced prices for water, electricity, gas or the installation of electricity and telephone connections are also a form of direct support to mountain inhabitants. Benefits and discounts vary from country to country: reduced water charges in Bulgaria (FAO, 2002), electricity in Ukraine and Italy, broadcasting, gas, cultural and medical services, as well as public education in Ukraine or reduced charges for telephone installations in isolated areas in spite of objectively higher costs in Italy (Castelein et al., 2006). In order to facilitate living and improve economic conditions, the Ukrainian national government provides subsidies and loans for public transport, roads and telecommunications (EC, 2004; Castelein et al., 2006). Thus, support for school buses (Ukrainian legislation) takes the form of financing or co- financing from the national to local level.

Although not yet practised in European mountain countries, payment for environmental services is mentioned in the Key Issues for Mountain Areas (Bieberstein Koch-Weser, Kahlenborn, 2004) as fair legislative regulation for both mountain and lowland populations. Namely, this regulation is to compensate for the economic disadvantages to mountain inhabitants due to restrictions made for the sake of lowland populations. For example, owners of mountain forests are restricted in the way they exploit those resources in order to protect watersheds and to keep the water stabilized for sufficient capacities in lowlands; therefore, the lowland population is charged in the form of taxes to compensate for the restrictions on owners of forests in mountains and motivate them to safeguard the environment. This regulation can be extrapolated to other disadvantages for mountain populations, thus decreasing the discrepancies between lowlands and mountains in Serbia, too.

In contrast to some Alpine countries where second-home housing is limited and restricted because they are most common for demographically stable communities, the population inhabiting poorly populated mountain areas such as a great number of villages in Serbia are in favour of second-home housing. This example comes from the Zlatar Mountain region (Prijepolje and Nova Varoš municipalities) where an individual initiative turned into the local action of manifold households. Namely, owners of land in this region have donated three hectares of land with the condition that the individual or family to whom the land is donated builds a house within two years (Dulanović, 2009). About 70 interested parties applied (Ibid.). Even though the remaining local population gained on social interactions, the initiatives of one private stakeholder can cause environmental problems (for example, absence of regulations, sewage supply and waste disposal leads to water, soil and biodiversity pollution and degradation). Therefore, it is relevant that the state or at least local government regulates this matter.

Besides the measures trying to mitigate emigration from mountain areas, there are also measures applied to the adaptation to present demographic structures. Based on the decentralised concentration concept, Germany adjusted its spatial development policy, adapting it to trends of demographic change. Even though the concept was applied to the whole country, there are significant benefits for small settlements such as those in mountain areas. Namely, there were three types of regions differentiated: urban agglomerations, rural areas and structurally weak areas which are also rural in character. The rural regions are

predominantly located in the eastern part of Germany where the model of central places was not initiated in the 1960s as was the case in western and southern parts of the country. Since that time, national spatial development has been based on a balanced settlement network consisting of different levels of central places. Urban agglomerations offer the most functions and services (e.g. primary, secondary schools and universities); middle level settlements have only some functions and services (e.g. primary and secondary schools); and the lowest level of central places offers the most basic services (e.g. only primary schools). Thus, the settlements' functions were rather decentralised, but on the other hand each centre, depending on size/level, was legally bound to provide a certain number and quality of services. One of the conditions was that middle sized centres must be a maximum of half an hour by car from potential users. After shrinkage started, firstly influencing rural areas, low level central places lost many of their services. Local industries and shops became non-viable and therefore faced the closure process. Demand for a new spatial development approach has occurred – to give the opportunity for population in low level central places to fulfil their own needs, which is particularly an issue of relevance for mountain areas. The first pillar of the new strategy is the transfer of non-viable functions from low level centres to middle level centres; the second pillar is the responsibility of each municipality to develop its own spatial development strategy that is suitable for the specific problems, challenges and conditions of its territory; and the third pillar is the enhancement and support of local and regional cooperation. Confirmation of this concept was later established as well in the Federal Spatial Planning Act issued in 1998 [Domhardt, Troeger-Weiß, 2009].

Demographic structures are rather optimistically taken in development plans in Serbia, but in the Vlasina Spatial Plan for the Area of Special Use groups of very small settlements (only a few elderly inhabitants) are suggested for sequential loss of population and loss of status as villages, thus also understanding the current situation and adapting to it. For this, the advice from the Leading Spatial Planner in the Department for Building Užice, the Chief of the Municipal Authority and Secretary in the Local Assembly of Crna Trava Municipality and the expert for rural development and rural policy to reflect demographic change in goals and measures in local strategies should be highly regarded. Otherwise, all other measures become unrealistic and insufficient.

Adaptation of the current state is relevant in order to address existing problems and support the population that needs help. There are two examples in Serbian mountain municipalities in this regard. The first is the “Help at Home” project (Pomoć u kući – projekat gerontodomaćica), created at a national level, but applied locally. Namely, the Ministry of Labour and Social Policy, in cooperation with Jablanički County, started the six month project in Crna Trava municipality – one of the most demographically and economically lagging municipalities in Serbia (Kocić, 2009). The project consisted of specific courses in local centres for social work, after which the educated individuals were engaged in visiting elderly households, single person households and other that needed medical help. In municipalities such as Crna Trava, where the percentage of aged population is very high, the project went through more than one round due to great interest from its users (RTS Radio-televizija Srbije, 2011).

The other example is a project in the City of Užice, this time organised by the municipal government: Užice launched a tender in 2007 looking for the best project suggestion on a social inclusion topic. The selected project was proposed by the Centre for Social Services – Užice under the title “Supporting the Elderly in Villages” (City of Užice website, 2010). The idea of the project was similar to the “Help at Home” project, but due to limited financial and technical resources (number of staff and specialised vehicles for mountain terrain) Užice City conducted it only in its urban area, while citizens in villages remained excluded.

The principles and measures on demographic decline can be differentiated as those that are targeting to make a change and potentially mitigate or solve a problem and other measures the purpose of which is not to influence demographic structures, but to adapt to them. Hence, in most of the examples, the target is the mitigation of emigration and support for the elderly population. It appears that the Serbian government has already adopted some principles and measures from other European experiences in its legislative and strategic documents, but they are not being applied in practice yet. The other inconvenience is that individuals in mountain areas are running projects under undefined and unregulated circumstances and with no inclusion of other stakeholders, which can threaten the common interest of a local community.

5.2.3 Economic Opportunities

Agriculture is still an important activity in mountain areas because it is incorporated in traditional patterns. Nevertheless, farms and villages together with their traditional activities are dying out because of insufficient or non-existent subsidies for traditional production, traditional activities and farms (Plieninger, 2007). Mountain areas require a specific set of measures for the small farmers not to be jeopardized (UN, 2000). U. Tappeiner et al. (2005) argue that subventions to agriculture in Alpine mountain areas, even those considered favourable, are necessary for the sustainability of this activity, which is particularly recognised by some Alpine countries. Those countries applied the Endogenous Development concept in order to preserve local resources, crafts and traditional patterns in the development of local economies, so that each town and village can become unique.

Because the traditional activity of rural municipalities is based on small farms, countries such as Austria, Bulgaria and France promote support to small farms (households) thus supporting traditional small-scale production. In Serbia, this aspect is considered in the Law on Agriculture and Rural Development (2009), as well as in the National Sustainable Development Strategy (2009). Similarly, the rural development Strategy (2009) and National Rural Development Programme (2010) argue in favour of support for traditional breeds. In contrast to the last three sources, the Spatial Plan of the Republic of Serbia assigns organic production and the development of traditional agriculture and renewal of grazing activity directly to (high) mountain areas. In order to help with the promotion of local products out of their regions (and achieve higher economic profitability), some countries establish branding of the product under the label of geographic origin, thus guaranteeing its quality and geographical origin. Examples are found in the legislative acts of France and Switzerland (FAO, 2002; Castelein et al., 2006) and in the implementation of the strategy in Rhön Biosphere Reserve – Germany where product branding plays a significant role (Robinson and Keenan, 2010) and Serbia (Rural

Development Strategy (2009) and the National Rural Development Programme (2010)). In addition, Ukrainian legislation declares governmental responsibility to purchase “mountain” products at above market prices (Castelein et al., 2006) and similarly the Declaration of Brig (2008) suggests modulation of funds in order to support stock raising in specific fields and support for farmers whose production gives positive externalities.

Nevertheless, emigration from rural mountain areas has proven that traditional patterns of production alone are not sufficient to provide a level of economic development competitive in current times. This was the reason for encouraging the development of other activities alongside agriculture and forestry and it stands for the diversification principle. The principle of aiming to create highly qualified job opportunities outside of the agricultural sector has been launched by international documents such as ESDP (1999) and Guiding Principles (CEMAT, 2000), but also in national legislative acts and strategies. Thus, ski resorts and tourism centres play a relevant role in the economies of Austria, Italy, Germany and France and in Switzerland where the construction of tourism facilities is supported by loans (FAO, 2002; Castelein et al., 2006). Anyhow, countries in less developed mountain areas – Bulgaria and Romania – also give full support to the development of silvopastoral activities on the one hand and tourism, small industries and small enterprises on the other hand. To this regard, the Bulgarian Government grants state-owned facilities to private investors for the development of small businesses. In Romania there is tax-free operation of a business for the first five years for small-capacity tourism (up to 20 guest beds) (Castelein et al., 2006).

In Serbia, the principle of diversification is also broadly accepted and a whole range of strategic and planning documents in Serbia plead for the diversification of activities starting from prioritised national documents – the Poverty Reduction Strategy – to spatial plans for areas of special use. The list also includes the Law on Tourism (2005), the Law on Nature Protection (2009), the Tourism Development Strategy (2005), and Rural Development Strategy (2009). In favour of the principle were also interviewees: the president of the steering committee in Amity non-governmental organisation (2009), the Social Inclusion Deputy Team Manager - Deputy Prime Minister's Poverty Reduction Strategy Implementation Focal Point, the Coordinator for Economic Development and Employment – the Deputy Prime Minister's Poverty Reduction Strategy Implementation Focal Point, the Rural Development Advisor at the Department for Rural Development and the local population. In those documents, tourism development is considered as a crucial activity that brings new employment and capital originating from outside of a region. In the Rural Development Strategy (2009), two axes are recognised as particularly relevant to support other activities next to the traditional: the educational improvement of farmers and expansion of production from raw products to products with added value (processing, packaging, etc). Anyhow, measures are not specified.

Tourism and small scale industries based on local resources were not the choice by coincidence. Actually, they are chosen because they are complementary to traditional agricultural activity and also they are less harmful to the environmental qualities of mountain areas than, for example, large scale production. Thus the Rural Development Strategy (2009) and the National Rural Development Programme (2010) in Serbia plead for agricultural production to be closely

connected to the food industry and development of small and middle enterprises in rural areas and tourism, thus stressing the principle of complementary activities. The application of the principle also contributes to added value in agriculture that by the introduction of rural tourism practically becomes a part of eco-tourism activity.

Another principle under which measures on the improvement of economic opportunities in mountain areas are developed is cooperation. Successful results in cooperation have been achieved by the regional strategy for the Rhön Biosphere Reserve in Germany (Robinson and Keenan, 2010), village renewal projects and local agenda 21 strategies in Austria (Raumordnung Niederösterreich, 2010). Another example of cooperation among local community members is projects on building local ski resorts and a museum of local traditions in Switzerland (Mühlinghaus, Wälty, 2001), and a marketing strategy for local food products and brands, friendly farming and tourism are the result of farmers' cooperation in Germany (Robinson and Keenan, 2010). For that reason, legislation in Romania has declared measures on release from five-year taxes for the establishment of associations or groups of mountain farmers (Castelein et al., 2006).

A direct allowance is a form of financial support where the final users – families and individuals – are directly paid even in cases when the support comes from national funds. Such measures can be permanent (e.g. annual) or one-time-payments. Allowances (repeated payments) to farmers as support for agricultural production, to farmers with a certain percentage of slope-land and to small farmers who practice non-commercial production are permanently donated in Austria. There, farms are differentiated into four handicap zones based on land slopes, soil quality and climate conditions and those in the fourth zone (with most handicap points) get the highest subsidies (Lebensministerium AT, 2008; Hovorka, Dax, 2009). In addition, this form of support is advocated in the case of Bulgaria (FAO, 2002), Ukraine (EC, 2004; Castelein et al., 2006) and Switzerland (FAO, 2002; Castelein et al., 2006).

Following EU policy, the Rural Development Strategy in Serbia proposes compensation allowances specifically for rural mountain areas due to the difficulties in agricultural production. However, the Strategy gives no criteria on how to measure either the difficulty level or the definition of rural mountain areas. In addition, the review of the National Rural Development Programme, which followed the Strategy, does not mention any compensatory allowances.

The Serbian Ministry of Economic and Regional Development annually evaluates the status of municipalities. The most hindered municipalities are structured in marginalised areas which can be taken as an equivalent to the less favoured areas in Austria (and other EU countries). Taking this list, the Ministry of Agriculture, Forestry and Water Management has declared incentives for municipalities with territory above 500 m, where more than 100 of 1,000 inhabitants are unemployed or where protected natural areas occupy more than 15 % of the territory. Based on this, the national Government defines receivers of the support, as well as type of support and amount on an annual basis (Law on Agriculture and Rural Development, 2009).

In addition, farmers in the mountain areas of Austria, as well as in other EU mountain countries, benefit from direct allowances from EU structural funds, established to support the Common Agricultural Policy (Lebensministerium AT, 2008). The Rhön Biosphere Reserve strategy was supported by allowances from the fund for Less Favoured Areas (Robinson and Keenan, 2010).

The other group of support – one-off support – is when households and individuals financially benefit in terms of investment loans provided for construction of tourist facilities, as in Switzerland (FAO, 2002; Castelein et al., 2006), or general support, e.g. in Bulgaria and Ukraine (EC, 2004; Castelein et al., 2006). Also spatial plans for areas of special use in Serbia state the measure of loans and reduced taxes for agricultural activity, treatment of waste and renovation of buildings.

Economic development and the increase of opportunities are certainly interconnected with the level of awareness, education, knowledge and know-how, particularly when new economic activities are to be chosen and applied. Therefore, Scotland and Finland have developed strategies to cover mountain areas by communication technologies (ICT) aiming to improve accesses to education, lifelong learning and the economy in terms of direct accessibility to markets (Byers, Price, Camino, Nelson, 2001; Northern Periphery Programme, 2008).

Further, competitiveness appears to be a principle recognised in the Guiding Principles (CEMAT, 2000), advocating for it at both a regional and local level as attractiveness for private investors would increase. Simultaneously, the document stresses the need for reducing competition between local authorities. In Serbia, the National Strategy for Sustainable Development (2005b) and the Law on Regional Development (2009) point out the principle of regional competitiveness, while the Tourism Development Strategy (2005) shows an ambition for internationally competitive tourist products. In addition, the Spatial Development Plan stresses the principle of (regional) specialisation where competitiveness of regions increases with the development of specific features based on their comparative advantages.

Finally, the Šarganska osmica (the Šargan Eight) is a successful project initiated by the local community in one of the mountain villages in the Užice municipality. The Šarganska osmica is a narrow-gauge railway, build in 1925, which stopped operating in 1974, but reopened in its historical style as a result of a well organized local initiative (Brašanac, 2007). In the same village where this initiative was born, one more project has been realised – Drvengrad. This time, the realisation and idea is based on individual initiative and financing. The project initially included an Ethno Park with various amenities (cinema, restaurant, hotel, market, church, etc.), but was later expanded to have a ski-resort and other accommodation capacities (Lojanica, 2008). An additional expansion of the Drvegrad project is a National Ecology Centre which is the result of cooperation with the Ministry of the Environment and Spatial Planning. Cooperation between the investor and the Serbian government resulted in honouring Emir Kusturica (the investor) to be an executive officer and manager of the Šargan Nature Park - Mokra Gora (Šargan Nature Park -Mokra Gora website). The cooperation between the private and public sector is certainly a positive case in practice, even though the example exceeds the positive context there where the same person is empowered as a decision-maker on both protection and exploitation of resources – two activities opposing each other.

What is most striking after the analysis in this sub-section is the vast number of documents in Serbia that support a great deal of the principles that are supported by other Carpathian and Alpine countries; but they lack application in the form of concrete actions. Serbian strategies, plans and programmes tend to set goals, objectives and aims, but they are still lacking in precise measures and, which is of greatest importance, implementation in practice. Another difference is that local projects in Serbian mountain areas lack cooperation in the initiative in contrast to Alpine countries where all relevant stakeholders and entire communities are engaged in the project initiatives.

5.2.4 Accessibility and Infrastructure Systems

Three international documents – ESDP (1999), Guiding Principles (CEMAT, 2000) and Territorial Agenda (2007) – have launched the principle of balanced accessibility, referring to the whole European territory. The goal is to provide equal opportunities for development to all areas, especially with regard to technical and social infrastructure (ESDP, 1999). Along with the promotion of more balanced accessibility, Guiding Principles (CEMAT, 2000) and Territorial Agenda (2007) advocate the exchange of and improved access to information and know-how.

The principle of balanced accessibility is also defined at a national level. For example in Austria, where LEADER and INTERREG local community initiatives were applied (Hovorka, 2001), supporting in the first place cooperation and networking, but also an urban system with functional connections to the rural surroundings, balanced territorial development and equity of all areas in relation to infrastructure and knowledge. Another example is Italian law that also requires the improvement of living conditions for mountain inhabitants to the level provided for inhabitants in valleys, particularly stressing infrastructure and public services (Castelein et al., 2006). French legislation particularly focuses on access to information closely defined as an adequate extent and quality of radio and broadcasting in mountain areas (FAO, 2002; Castelein et al., 2006). Additionally, legislation in France takes care of medical coverage in mountain areas. Spatial planning documents in Serbia – the Spatial Development Strategy (2009) and Spatial Plan of the Republic of Serbia (2010) - postulated the accessibility principle, referring to infrastructural endowment and accessibility as the main goal as they defined it.

Similarly, all spatial plans analysed for areas of special use expect mitigation of the negative population structure, preservation of the existing population and attraction of immigrants to rural areas to be the outcome of socio-economic and infrastructural endowment. Therefore, they advocate raising the awareness and knowledge level and improving the broadcasting coverage signal and quality of program. Since complete infrastructural coverage of all settlements is too expensive to be realistic, availability of cell-phone signal coverage and land-line telephones are specifically emphasized. However, this is rather a set of achievement standards than operational measures.

The importance of infrastructural endowment in Serbia is particularly appointed by local authorities (Department for Building Užice; Department for Building, Urbanism, Planning, Designing and Residential Issues Kuršumljia; Crna Trava Municipality; Centre for Social Work

Kuršumljija; Centre for Social Work Knjaževac)⁶⁶ and the local population, although an interview with the NGO Amity also proved that lack of infrastructure causes further development difficulties in rural areas. The leading spatial planner in Užice stressed infrastructure endowment as priority action; otherwise other investments (in agriculture, tourism, etc.) remain with no perspective for success. Similarly, an interviewee in the Department for Building, Urbanism, Planning, Designing and Residential Issues in Kuršumljija pointed out the necessity for road infrastructure, presenting an example where even geographically more accessible parts of the municipality (next to the Toplica River) were hindered in development due to the absence of roads. According to the Centres for Social Care in Kuršumljija and Knjaževac, the lack of road infrastructure is one of the reasons for excluding the population in mountain villages from services that are regularly available for other citizens in need. Finally, local residents in mountain villages feel disconnected from shops and other facilities available in a municipal centre so that, in their estimation, the construction of road infrastructure is necessity for the future of villages and as a precondition to motivate young people to live there.

The importance of road construction was recognised as a trigger to increasing employment by introducing tourism, already at the beginning of 20th century, when the majority of the local community decided to conquer the highest peak in Austria (TourMy Country website, 2011). Nowadays, post-buses which integrate passenger transportation and the postal service are a measure taken to increase accessibility of the most isolated mountain villages in the Swiss and Austrian Alps (PSAC, 2007). The other measure they apply is transportation on-demand (Ibid.). Namely, the municipality is in charge of providing a certain number of mini buses and/or taxis which take passengers who book in advance. In this system, bus stops and the time-schedule are defined as is the case with regular public transport; the difference is just that the vehicle will not arrive at a bus stop unless it is pre-arranged. In addition, the ticket price for the transport is also known in advance (constant price) and pupils, students, the unemployed and other vulnerable groups are subsidised by the municipality.

In order to develop railways and maintain the road network, Alpine countries have established a toll system for traffic on roads, there are: toll charges for all kinds of roads and for all types of vehicles in Switzerland; charges according to driven kilometres for freight transport in Slovenia, France and Italy; and charges for certain time-period regardless of the kilometres driven in Switzerland and Austria (PSAC, 2007). This income is partially used for road construction and maintenance, while other revenue is collected via tolls, fuel taxes and registration of vehicles (IRU, 2000). In Switzerland, 70 % of the income is spent on road construction and maintenance, the other 30 % is part of the general national budget (Rudel, Maggi, Tarola, 2004). In Serbia, a toll for motorway use is also charged, but according to the company for road management, its

⁶⁶ Based on interviews with the Leading Spatial Planner in the Department for Building Užice, Department for Spatial and Urban Planning and Project Manager for the Spatial Plan of Užice Municipality (conducted in July 2009); the Head of Department for Economics and Finances and Expert Associate for Urbanism and Design and Planning Documentation in the Directorate for Building, Urbanism, Planning, Design and Housing Issues Kuršumljija (conducted in July 2009); the Chief of Municipal Authority and Secretary in the Local Assembly of Crna Trava Municipality (conducted in July 2009); the Director of the Centre for Social Work - Kuršumljija (conducted in November 2009); the Sociologist in the Centre for Social Work - Knjaževac (conducted in December 2009).

annual income is not sufficient for financing the construction and maintenance of road infrastructure (Slivar, Tašković, 2011). In fact, charges for motorway tolls in countries such as Romania, Bulgaria, Czech Republic, Slovenia, Slovakia, FYRO Macedonia, etc. are lower than in Serbia, which indicates difficulties in the organisation of resources (Marković, Čonkaš, 2011; Medija centar Bor, 2011).

Another aspect of accessibility in mountain areas is accessibility to knowledge. The relevance of channels to share information and knowledge and information transparency available to the public are advocated by various international and national documents: Guiding Principles (CEMAT, 2000), the Berchtesgaden Declaration (2002), Territorial Agenda (2007), the Declaration of Brig (2008), the Alpine (1991) and Carpathian Convention (2003), legislation in France and Italy (Castelein, et al, 2006), the Serbian Law on Environmental Protection (2004, amended in 2009), the National Strategy on Sustainable Development (2005, amended in 2007) and plans for areas of special use. Some of those documents assign a requirement for the installation of IC technologies; particularly in low populated areas. Thus ESDP (1999) states that their usage is to attract business based on high technologies and the Declaration of Brig (2008) suggests broad-band access as a basic standard. The national law in Italy obliges groups of villages to establish information centres (Castelein, et al, 2006).

As an upgrade to existing knowledge, innovativeness is supported as a principle in the Law on Regional Development (2009) and the Rural Development Strategy (2009). Good provision of education and innovation in low population density areas is additionally advocated in ESDP (1999), too. With specific reference to mountain areas, the Declaration of Brig (2008) stands out for improving and innovating service provision, particularly with regard to education.

Both formal and informal education play a role in sharing knowledge and improving innovativeness. In formal education practice, some countries define the minimum number of pupils attending a school in order to keep the school functional (e.g. five in Austria) (Bauernebel, 2008). In Serbia, it is not the case, however, the ministry in charge is eligible to close down schools and redirect pupils to other settlements to continue their education (Milanović-Hrašovec, 2009). The introduction of tuition given by parents at home, as an eligible form of education, is one of the measures in France, representing an alternative to the regular education system (Castelein, et al, 2006).

Life-long learning is a principle supported in the Spatial Plan of the Republic of Serbia (RASP, 2010) and spatial plans prepared for areas of special use, referring to the continual education of researchers, the local population and potential visitors. This principle is also related to informal education, including requalification. Namely, in the highlands of Scotland and other mountain areas, organisations that prepare and give courses and training to citizens tend to establish permanent cooperation between private entrepreneurs and the state employment agency. Thus, the circle consisting of the unemployed, institutions for requalification and the employer is closed – increasing the chances for employment. The other example is the Mountain Force organisation (Mountain Area Workforce Development Board [MAWDB], 2011) where courses are based on the needs of employers, so that attendees can find employment right after the course. Besides courses defined by the needs of employers in the same network, topics should

also be open to the demands of potential attendees where organisations for informal education are flexible enough to adjust to them (Wyg International – IMC Consulting, 2004).

Serbian documents do not refer to Serbian mountain areas explicitly, even though some principles and rare measures relate to them. Similar to previous topics, here again, it has been shown that in the Serbian case there is a gap between planned and declared on the one hand and application on the other hand.

5.2.5 Mountain Area Management

The Berchtesgaden Declaration mentions the decentralisation of countries as a key issue and the delegation of power to local authorities as the best way to respond to real community needs. Therefore, it is clear that decentralisation is a precondition for the fulfilment of subsidiarity – a principle of the devolvement of decision-making to the lowest possible level. The principle inosculates a wide range of documents and practice, starting from the internationally oriented Guiding Principles (2000), then regional agreements such as the Berchtesgaden Declaration (2002), the Alpine (1991) and Carpathian Convention (2003), taking place in legislation on mountain areas in Italy, France and Switzerland (as Castelein, et al (2006) write) and finally being transparent in the implementation of the Rhön biosphere reserve in Germany and application of local strategies in Austria.

Those two principles are also promoted in Serbian legislation (the Law on Regional Development, 2009), strategies (the Regional Development Strategy, 2005; the Rural Development Strategy, 2009; the National Rural Development Programme, 2010; and Spatial Development Strategy, 2009) and the Spatial Plan (2010) that also advocates the demetropolisation of Serbia. Nevertheless, evidence shows that these principles have recently started being applied. Namely, changes and adjustment in the territorial division of Serbia, as well as financial issues and the independence of municipalities are in process. In 2007, the Serbian Government started the process of regionalisation - division into statistical-planning regions that are not given any financial or political power (GRS, 2007). But, the concept of regions evolved in 2007 gives no delimitation on the regions and in both the Spatial Development Strategy of the Republic of Serbia (2009) and Spatial Plan (2010) there are only suggested models for future regions.

Closely related to the implementation of decentralisation and subsidiarity principles is the principle of participation of the local population in decision-making. The principle differs from the principle of subsidiarity by expecting not only the lowest administrative level to participate in decision-making, but also the inclusion of the local population and their opinions in this process. Direct democracy or direct participation of individuals is most embedded in Switzerland. Namely, direct democracy allows an individual to influence even legislative acts at all federal, cantonal and communal levels (Swissinfo.ch, 2007). Due to regular interaction between government and citizens, communication and voting are organised on the Internet and by exchange of emails (Ibid.). Governmental proposals with pro and contras are communicated to people in this way and feedback (votes pro or contra) are also communicated back in the same way. For the endogenous development, it was inevitable for the Swiss

government to involve the local population; therefore, the voice from communities at a local geographical level and the promotion of a bottom-up approach played a significant role (Dax, 2002; Castelein et al., 2006). Nowadays, about 80 % of communes, which are smaller in size, organise decision-making meetings on an annual basis in order to discuss finances, taxes and legislation (Swissinfo.ch, 2007; Switzerland's Official Web Portal, 2011). On the other hand, larger communes establish a communal parliament (Switzerland's Official Web Portal, 2011). Generally, it has been proved that communities with higher engagement of population achieve better results in the sphere of economics and public services (Kaufmann, 2007).

Besides Switzerland, the projects presented in the dissertation so far testify that the principle is also being practised in other Alpine countries such as Austria, Germany and France. The population participation principle is additionally promoted by the Guiding Principles (2000), both European mountain conventions and is incorporated in Serbian legislation (the Law on Planning and Construction (2009)), strategies such as the National Strategy for Sustainable Development (2005), the Strategy for Rural Development (2009) and Spatial Development Strategy (2009), the Spatial Plan of the Republic of Serbia (2010) and analysed spatial plans for areas of special use. However, participation in Serbia is significantly simplified in comparison to Switzerland. Even though recent documents support the principle of participation, the responses already in practice are humble. In the Law on Planning and Construction (2009), public participation is guaranteed in the form of being able to respond to the public exhibition of a planning document for a period of 30 days. This procedure follows expert control, by which the inclusion of stakeholders is marginalised.

Polycentricity, urban-rural interdependences and territorial cohesion are three principles closely related to each other. A polycentric settlement network "with a graduate city-ranking" (EC, 1999, p. 21) is promoted as one of the objectives, where "smaller towns and cities" are to "revitalise rural regions in decline" (EC, 1999, p. 22). This statement in ESPD (1999) already shows the relation between the first two principles. As urban centres with their rural hinterlands configure regions, territorial cohesion further promotes relative balance between the regions with regard to their economic and social characteristics. ESDP (1999), Territorial Agenda (2007) and the Spatial Plan of the Republic of Serbia (2010) support all three principles. In addition, urban-rural interdependencies and territorial cohesion principles are addressed in the Guiding Principles (2000), Serbian National Strategy for Sustainable Development (2005) and the Spatial Development Strategy (2009), while the territorial cohesion principle is accepted in the Declaration of Brig, the Alpine Convention (1991), Carpathian Convention (2003), the Berchtesgaden Declaration (2002), the Serbian Regional Development Strategy (2005), the Serbian Law on Planning and Construction (2009) which promotes balanced regional development and the Law on Regional Development (2009) which stipulates a decrease in regional and intraregional disparities.

An example of measures based on those three principles is the spatial territorial concept of Germany known as decentralised concentration. In order to prevent further exodus from areas where many social and economic functions became unviable, the federal government responded by building three pillars: the transfer of non viable functions from low level centres

to middle level centres; devolving responsibility for each municipality to develop its own spatial development strategy; and enhancement and support of local and regional cooperation (Domhardt, Troeger-Weiß, 2009). Specifically with regard to the first pillar, graduate-city ranking aimed to equally cover the territory, to prevent concentration of the population and diminish the marginalisation of smaller settlements. Each settlement, depending on its rank in network, is responsible for providing particular services and facilities.

In the Spatial Plan of the Republic of Serbia spatial development is based on the establishment of functional urban areas (FUA), each representing one city with settlements functionally related to the city. By principle, this is also polycentricity and urban-rural interdependences. Moreover, the Spatial Development Strategy (2009) and the Spatial Plan (2010) suggest administrative changes in the settlement network: settlements with more than 5,000 inhabitants get the status of a municipality, while the remaining (small) settlements group together forming a rural municipality. More particular for mountain areas, spatial plans for areas of special use suggest the model of a hierarchical settlement network at the municipal level: one town, a few rural centres and all the rest villages. For this hierarchical system not all settlements provide basic social services (primary school, doctor, pharmacy, shop, etc.), but the services are accessible to the population in each settlement. However, due to the devastated demographic structure, in the Spatial Plan for Vlasina (2004) it has been openly realised that the smallest villages (less than 15 inhabitants) cannot be supported unless they treasure the relevant cultural life pattern to be preserved and are used for tourism.

The principle of setting clear objectives is emphasised in the Berchtesgaden Declaration stating that it is necessary to define clear, but flexible, objectives followed by indicators for measuring accomplishment. Besides being clear on objectives, a relevant side of mountain management is also being clear in the delimitation of mountain areas. Namely, examples from Switzerland and Austria show that precise objectives and measures are inseparable from clear and detailed definition. The units by which they define mountain areas are on small geographical scales: in Switzerland a Registry of Agricultural Production and Zoning is used (Castelein et al., 2006), while mountain areas in Austria are defined to the level of mountain farms (Lebensministerium AT, 2008). This is because they practise direct allowances. In contrast, the criterion the Serbian Ministry for Agriculture, Forestry and Water Management uses to definition mountain areas is beyond a 500m altitude. This can also be sufficient for the subsidies donated to municipalities, which cannot be considered applicable for specific operational measures for a particular farm. However, most of the example countries with developed legislation on mountain areas rely on an administrative definition. Thus, there is a list of mountain municipalities in Bulgaria and France; completely and partially mountainous municipalities are differentiated in Italy and Romania; and mountain settlements in Ukraine are defined (Castelein et al., 2006). In addition to the definition on mountain municipalities, legislation in France defines mountain regions, too.

In cases when mountain areas are defined at a national level, some countries decide to devote to them a special status. One of the most common examples nowadays is the status of Less Favoured Areas, due to benefices that can be gained from EU structural funds (European

Commission, 2009). This scheme is configured for the accomplishment of a Common Agricultural Policy, aiming to safeguard the agricultural development and compensate for the disadvantages in areas with less productive conditions. Use of Common Agricultural Policy funds is eligible for all EU countries. Besides the special status given to mountain areas, Ukrainian legislation on mountain areas represents a case where special status is directly awarded to mountain citizens (Castelein et al., 2006). Namely, a special ID card is issued for citizens in mountainous settlements (defined by law). By receiving this card, individuals become eligible for special status: improved employment conditions and wages; pensions 20 % higher than the national average; and the Government purchases agricultural mountain products at above market prices (Ibid.). By the Law on Regional Development (2009), the Ministry of Economic and Regional Development is in charge of annually classifying the regions, municipalities and cities according to their development level. The aim is to take action to decrease territorial disparities. A particular focus is on devastated industrial areas and rural areas, which indicates that mountain areas are included in those criteria to some extent. Before the topic of regionalisation of Serbia was brought up, this methodology was applied to the classification of municipalities, which was also a base for the Ministry of Agriculture, Forestry and Water Management to define marginalised areas (equivalent to Less Favoured Areas) and prescribe a set of annual measures⁶⁷.

Strategies are to incorporate the attitudes, needs and interests of various parties: NGOs, the public, private and civil sector. Clearly, collisions of interests between different actors have to be consolidated, thus cooperation plays an essential role. The cooperation principle stands out from other principles by being widely accepted in both Serbian and other European documents. Even though some documents put more accent on horizontal while others on vertical cooperation, networking, coordination or partnership, it is generally advocated that the principle should take place at multiple levels: from local to trans-border. Thus ESDP, the Serbian Law on Environmental Protection (2004) and the Serbian Regional Development Strategy (2005) stand for cooperation in general while the practical example of the Rhön biosphere reserve, legislative acts in France and spatial plans for areas of special use in Serbia support cooperation between regions and municipalities.

An example of cooperation is the permanent consultancy of the government by NGOs in Switzerland. The Swiss Mountain Regions Organisation and Swiss Aid to Mountain People Association take part in preparing proposals for the government, as well as informing the public about them (Price, Jansky, Iatsenia, 2004; Castelein et al., 2006). Contact with mountain inhabitants is also kept continuously open. The scope of NGO contribution ranges from advisory meetings, specific training, seminars and courses, to publishing magazines that inform and educate on specific issues for mountain populations, surveys and research (Castelein et al.,

⁶⁷ According to an interview with the Advisor for Drafting the Development Criteria and Assessing the Level of Development, Department for Analysis and Regional Development Policy, Ministry of Economic and Regional Development (conducted in June 2009).

2006). An interview⁶⁸ testified that cooperation between the Government and NGOs in Serbia has been introduced in the preparation of a Poverty Reduction Strategy, which was an innovative approach. Nevertheless, forms of cooperation such as inter-municipal or inter-regional cooperation are not obligatory in Serbia or particularly encouraged.

Also, the Romanian Act on Mountains gives incentives for the establishment of an NGO to support governmental decision making and improve communication with the local population (Ibid.). Mountain regions in Romania are also in charge of cooperation through specialised regional bodies, as associations of municipalities are stimulated to cooperate in Bulgaria and France (Ibid.). This type of grouping is not obligatory for local authorities (in Bulgaria this refers specifically to mountain municipalities), but since central government considers cooperation as relevant contribution to development, these associations are encouraged in different ways. In the case of Bulgaria, grouping of local authorities is encouraged by a set of responses which are mainly economic incentives, but also by each municipality having a representative on the National Board for Mountain Regions. In France, besides the added value of cooperation, communes are willing to group in order to gain financial incentives from the central government. The result of this encouragement is shown by the fact that there are 2,588 inter-communes in France, comprising more than 90 % of communes (Ibid.). Moreover, in some countries municipal cooperation is mandatory as is the case in Italy (Ibid.). Cooperating communities must belong to the same province, they must comprise at least 5,000 inhabitants and be municipalities not larger than 40,000 inhabitants; in the case of partially mountainous municipalities at least 15 % of their population has to be from within mountain areas (Ibid.). The communes are embodied – consisting of representatives of each member municipality and an executive body. They play a particular role in the implementation of socio-economic development and establish information offices for inhabitants (Food and Agriculture Organisation [FAO], 2002). Moreover, in the Berchtesgaden Declaration (2002) it is stated that setting national mountain policies should be a precondition for establishing international cooperation (at a level of mountain massifs), as in the example of Alpine and Carpathian Conventions. The concept of international cooperation between countries sharing mountain massifs is also supported by D. Blamont, M. T. Pellicori (2005) and Castelein et al. (2006).

The already mentioned cooperation between governments and NGOs is one of the possible forms of cooperation between sectors. The cooperation between sectors with the possibility of including two or more of them is understood as partnership. Public-private partnership is one of the forms, progressively combined with other sectors – nongovernmental and civil. The principle is supported by the Berchtesgaden Declaration (2002), Guiding Principles (2000) and several documents in Serbia (the Law on Regional Development (2009), the Regional Development Strategy (2005), Spatial Plan (2010) and spatial plans for areas of special use).

⁶⁸ Deputy Manager in the Prime Minister's Team for Implementation of Poverty Reduction Strategy and Focal Point for Social Policy and Vulnerable Groups; and the Coordinator for Economic Development and Employment, also Part of the Team for Implementation of Poverty Reduction Strategy.

Another aspect of cooperation is represented in the principle “keep regional focus” set by the Berchtesgaden Declaration and inspired by experiences in Alpine countries. The message is on regional cooperation and scope that will include whole mountain massifs instead of their parts separated by national borders. The Spatial Plan of the Republic of Serbia (2010) supports the principle by taking rivers and mountain massifs as entities to connect neighbouring countries instead of being obstacles between them.

Networking is another principle set by the Berchtesgaden Declaration (2008), and also in the Alpine Convention (1991) and Serbian Regional Development Strategy (2005a) and Special Plan (2010). Networking in research and monitoring is of crucial importance so that exchanged data and results can be compared, comparable and complementary.

Evaluation and monitoring are advocated by international spatial planning documents – ESDP (1999) and Guiding Principles (2000) and explicit documents on mountain areas such as the Alpine (1991) and Carpathian Convention (2003). In Bulgaria, the Bill on mountain areas declares the establishment of a National Board for Mountain Regions as an institution to, among other responsibilities, monitor implementation of the Bill (FAO, 2002; Castelein et al., 2006). The other example – Switzerland – shows that the institution responsible for implementation is not the same institution to conduct monitoring and evaluation. Namely, cantons are in charge of implementing the law and allocating resources from the mountain fund, while the federal government monitors these processes (Ibid.).

Criteria and measurement for the monitoring and evaluation of development in Serbia are in the phase of infancy. A criteria list was introduced with the Poverty Reduction Strategy (2003). As argued by interviewees⁶⁹, it was in the form of a pilot project and with the expectation of expanding to other governmental institutions. Similarly, preparation of the Spatial Development Strategy was followed by the introduction of a comprehensive set of criteria, modelled on ESDP (1999). In addition, the set was expected to be a base for the Spatial Plan which came after the Strategy.⁷⁰

In the creation of policies, strategies or legislation, it is often stressed that the complexity of problems and features requires a holistic approach where all relevant aspects of an area are equally considered. Different formulations are used – a comprehensive approach, an integrated approach, an overall view – which are frequently reflected in general European documents by mountain oriented organisations and studies or massif specified projects. Thus ESDP (1999) stands out for its integrative approach to urban and rural areas as holistic spatial entities. Further, the Guiding Principles (2000) addresses integration of conservation and development. An integrated planning and holistic approach are additionally supported by the Conference on Community Policies and Mountain Areas (Bigaran, 2002) and in the Key Mountain Issues (Price,

⁶⁹ The Deputy Manager in the Prime Minister’s Team for Implementation of Poverty Reduction Strategy and Focal Point for Social Policy and Vulnerable Groups; and the Coordinator for Economic Development and Employment, also Part of the Team for Implementation of Poverty Reduction Strategy – Serbian Government (conducted in June 2009).

⁷⁰ Internal data-base of the Institute of Architecture and Spatial & Urban Planning of Serbia: Omiljena Dželebdžić, Definisanje i izbor indikatora za monitoring prostornog razvoja Srbije / Definition and Selection of Indicators for Spatial Development Monitoring of Serbia.

Jansky, Istenia, 2004). The latter source notes that sectoral policies are also beneficial, but only if they can form a holistic embracement of relevant issues. Finally, to this list can be added the conventions on the Alps (1991) and Carpathians (2003).

Finally, the Spatial Plan of the Republic of Serbia (2010), the Law on Environmental Protection (2004) and the Law on Regional Development (2009) in Serbia as well as Italian, French legislative acts, the Alpine Convention (1991) and the Berchtesgaden Declaration support transparency as a principle. The principle focuses on the importance of the public being well informed on the results of research, monitoring and other actions taken.

5.3 Summary

Problems in European mountain areas are addressed by European mountain countries through different instruments, settings of principles, measures and application in practice. Nevertheless, not all the European mountain areas are equally treated by the national, regional and local governments. Namely, in centralised countries such as Serbia, regions and municipalities have no or very weak power in decision-making and in financial matters, thus the national government is the only one to be in charge of development and management.

Another issue in addressing problems in mountain areas is that Serbia lacks explicit measures on mountain areas problems. The analysed Carpathian (Romania and Ukraine) and Balkan Mountains (Bulgaria) countries have followed examples and practices of the Alpine countries since the 1990s, but in Serbia the first systematic responses (explicit inclusion in the Spatial Plan and spatial plans for areas of special use on protected natural mountain areas) started even later - at the end of the 2000s. Therefore, the whole range of strategic, spatial planning and legislative documents analysed here actually confirm that the particular focus on the mountain areas of Serbia are just in their initial phase. This means that principles, goals and objectives on mountain area development are to a great extent adopted from other international and national practice, but their clarity and preciseness is lacking, as well as their implementation.

Taking all experiences together, the measures declared and practised to address problems in European mountain areas indeed deal with each problem category: environmental, demographic, infrastructural, economic and management problems. It appears that management problems are predominantly addressed by improvement in different aspects of the management itself. Also, treatment of other groups of problems turns out to be significantly dependent on management organisation and the opportunities it provides. Therefore, the leading issues addressed in the treatment of demographic problems are actually improvement of infrastructure, accessibility, economic opportunities and options in management in mountain areas. Similarly, economic opportunities appear to be inevitably dependent on infrastructure and human resources, etc. The greatest gap between existing experiences and responses in other European mountain countries and Serbia is in the sphere of management. This means that Serbia should consider significant changes and adjustments in this field, particularly because of the comprehensive influence that the management of mountain areas has on other fields of problems.

6 TOWARDS ENHANCEMENT OF SUSTAINABLE USE AND SOCIO-ECONOMIC DEVELOPMENT IN SERBIAN MOUNTAIN AREAS

The aim of the chapter is to answer the question of how to enhance the use and socio-economic development of Serbian mountain areas. In order to recognize perspectives of Serbian mountain area development, the following paragraphs discuss the role of and possible improvements in the instruments and measures existing in Serbia and the role of instruments and measures that have not been applied yet.

The analyses presented in the previous chapter have shown that each category of problems in mountain areas – environmental, demographic, infrastructural, economic and management, are addressed by accessibility, infrastructure, economy and management measures. Namely, improvements in accessibility, infrastructure and in the field of the economy are applied in order to enhance the protection of the natural and inhabited environment, demographic structures and economic opportunities. Moreover, it has been shown that measures in management are used to tackle all categories of problems. In contrast, the environment (natural value) and population (demographic components) are treated and protected indirectly by the enhancement of other fields: management, infrastructure and economics. Therefore, this chapter puts the accent on the possible enhancement of Serbian mountain areas in the fields of management, accessibility, infrastructure and the economy.

If no action on mountain area problems, as they currently are, were taken, their ecological, economic and social functions would be permanently and possibly irreversibly impaired. Direct impact on environmental factors, such as air, soil, water and biodiversity pollution and degradation, actually impairs one of the most valuable aspects of mountain areas – natural heritage. Also the lack of certain types of infrastructure and inconsistent, incomplete management harms natural resources, too.

Impaired nature also degrades their economic value. In that case, the benefits of the most attractive and competitive products would be wasted and economic functions hindered. The economic future of Serbian mountain areas also relies on human resources and social capital, infrastructure and responsible management, which indicates intrinsic relations between all categories of problems.

Social functions and another value of Serbian mountain areas – cultural heritage, would become a matter of the past without people and improved demographic structures (age and education). The problem of deficient and outdated infrastructure standards as well as time-consuming and superficial actions that do not correspond to the current needs of mountain population are major points for the enhancement of the overall character of mountain areas.

So, all the fields of mountain problems – environmental, demographic, infrastructure, economic and management, are mutually related and neglecting them might lead to an overall loss of mountain advantages and the ecological, economic and social functions of mountains. This would result in mountain areas without a future and unstable territorial cohesion.

Therefore, here is a summary of the instruments and measures presented in the previous chapter, pointing out their possible role and improvements in the context of future perspectives for Serbian mountain areas and improvement of their functions. Possible enhancements in management are discussed in the first section, differentiating between those already existing in Serbia and those that are not applied yet. The second section presents a discussion on instruments and measures in the field of infrastructure/accessibility and finally there is a section about possibilities in the field of economics.

6.1 Enhancement of Serbian Mountain Area Management

This section discusses the options for enhancing Serbian mountain area management using the instruments presented in the previous chapter. Because there are instruments that are applied in Serbia, but not specifically to Serbian mountain areas – legislation, institution-building, financial management and spatial planning, the first part of the section discusses the relevance of each instrument and potential enhancements explicitly with regard to Serbian mountain areas. The second part of the section then discusses instrument of local population participation which is not applied in Serbia and the establishment of Serbian mountain areas as special status areas.

6.1.1 Improvement of Existing Instruments

6.1.1.1 Role and Improvement of Legislation on Serbian Mountain Areas

Explicit legislation on mountain areas brings multiple advantages to the management of mountain areas. First, a conclusion drawn at the Community Policies and Mountain Areas Conference (2002) and the Sharing the Experience – Capacity Building on Legal Instruments for the Protection and Sustainable Development of Mountain Regions in South Eastern Europe Workshop (2005) highlighted the necessity for explicit legislation for mountain areas in order to regulate and more successfully ensure balance between development and environmental resources.

Second, it is also considered that implementation of general policies and laws, even though they tackle problems in mountain areas, can hardly indicate a relationships between indirect causes (universal solutions) and specific results (impacts on mountain areas) (EC, 2004). Therefore, in order to enable proper evaluation of results and more clearly identify factors influencing problems in mountain areas, a set of explicit legislative measures is needed.

Thirdly, the Serbian documents and legislation analysed, if at all, refer most commonly to Serbian mountain areas as areas with a greater extent of problems, but on the other hand, the responses and measures are universal to the entire Serbian territory.

Fourthly, the existing set of legislative acts in Serbia point out protection of cultural heritage, waters, soil, forest and landscape, which are exactly features of Serbian mountain areas; however, they do not relate them to the specifics of the mountain areas.

Fifthly, Serbian strategies, legislation and programs keep a distance from concrete measures, remaining more general and oriented towards defining principles and aims. For those reasons, some particular problems in the management of Serbian mountain areas can be overcome by

the introduction of explicit legislation or at least by the stipulation of regulations on mountain areas in existing legislation, as is the case in France.

Besides the protection of cultural and natural heritage, legislation in Serbia should embrace other topics common in the legislative acts of other European mountain countries and also topics that correspond to problems identified in Serbian mountain areas. Most importantly, the legislation should tackle the issues that represent the main perspectives for mountain development in Serbia.

Topics included in the legislation of the analyzed European mountain countries that are missing in Serbian legislation, but should be integrated, are: definition of mountain areas, support for traditional activities (agriculture and forestry as the foundation for endogenous development), economic diversification (tourism and small and middle enterprises as new activities), infrastructural hindrances, overall quality of living conditions and the decentralisation and widening of local authority jurisdictions.

Regarding the identified problems in Serbian mountain areas, nature and its use require legislative support primarily in the regulation of thorough and consistent monitoring of all natural elements – air, water, soil and biodiversity. Besides increasing the density of measurement networks, documents assessing environmental impact should be a necessity for every project, accompanied by a project budget assigned to the sanation of potential consequences. In the fields of economics and infrastructure, significant differences between mountain – lowland areas and urban – rural areas can be mitigated by legislative measures. Consequently, there would be a need to precisely delineate mountain and lowland areas, but also to define the terms “city”, “town” and “village” and finally “urban” and “rural areas”. Existing experiences have shown that legislative acts can be of great use in this matter, especially when precise delineation is needed where certain funds are dedicated separately to urban and rural development.

In the field of management problems, legislation should be an instrument to clearly assign responsibilities to different bodies covering all stages: research, planning/decision-making, implementation, monitoring and evaluation. Since there are difficulties in following the top-down hierarchy of documents, legislation should be used to clarify which documents are to be brought first and which follow. Certainly, creation of a mountain policy should start from defining vision and major goals and principles that can be specified at the state level in a strategy; this should be followed by set of strategies and spatial plans at regional and local level and finalised by master plans (business plan) and projects for specific locations. Synchronized goals and synergistic actions can be expected only after this procedure is implemented.

Legislation as an instrument can be applied in more than way. One of the options is to create one law on mountain areas, the other to create several laws or stipulate explicit topics on mountain areas in existing legislation. Judging by the experiences of other European mountain countries, having only one law does not bring about crucial change, although it is preferential compared to complete absence from legislative acts. However, mountain areas embrace comprehensive aspects that can hardly be covered by only one act. Therefore, laws should

firstly define mountain areas, differentiate mountain households and farms by physical, economic and social difficulties they are exposed to and then include a whole range of topics (e.g. natural protection, transportation, agriculture, tourism, small industries, etc.). The range of topics does not necessarily need to be elaborated individually by legislative act, but they certainly should be referred to in existing or developing acts.

Laws should also take a role in establishing instruments still missing in Serbia. Thus the widely practised, tested and promoted participation of local populations and their initiatives should be regulated this way. This is possible even before general changes in centralised governing model are made, therefore, making this a priority might significantly contribute to the enhancement of Serbian mountain development.

Before Serbia becomes a decentralised country, legislation can also be the instrument to encourage cooperation between municipalities and regulate incentives for their grouping and development on common ground. In addition, the Carpathian Convention members, of which Serbia is one, have the option for establishing international legislation, as supported by the Sharing Experiences workshop (on Mountain Regions in South Eastern Europe, 2005).

The exchange of experiences during the International Year of Mountains resulted in recommendations for establishing legislation on mountain areas at various levels – international, national and regional (Ebner and Dax, 2002; Price, Messerli, 2002). Clearly, the unitary system in Serbia does not allow the regions to devolve legislation on their own. For this reason, regions in Serbia, after they are established, will have no legislative power devolved from a national level. Since the process of regionalisation has already lasted three years, the steps towards decentralising legal and other powers can take considerably more time. Development of international legislation is enabled regardless of the interior system of a country. In order to take urgent action concerning mountain areas, legislation in Serbia should stress the already established options – the adoption of acts at a national and international level with regard to the Carpathians until cooperation at the level of other mountain massifs is established.

6.1.1.2 Role and Improvement of Institutional Framework on Serbian Mountain Areas

The institutions responsible for mountain areas can be part of existing bodies or newly established institutions explicitly dealing with mountain areas. In decentralised Switzerland and Italy with a high level of independence for some regions, mountain institutions were not established at a national level because cantons/regions and mountainous municipalities are allowed to decide on their further development. In contrast to those countries, centralised France, Romania and Bulgaria declared the establishment of national and regional institutions. Regarding those cases, and for Serbian regions and municipalities still having limited jurisdictions and decision-making liberties, institutions concerning mountain areas at a national level appear necessary. However, the time-consuming and costly establishment of independent institutions for Serbian mountain areas can be overcome by permanently embracing relevant topics in already existing institutions and establishing departments that will take care of problems in Serbian mountain areas. Departments should be established within ministries (e.g.

Ministry for the Environment and Spatial Planning, Ministry for Regional Development). In this way, decisions and measures declared would have political power and validity and enhanced chances for reliable financial support.

In the future, regions should take over the leading role in taking care of Serbian mountain areas because it is expected that action regarding their use can be taken more appropriately to the specific character of each region and because management should be more efficient when run by several bodies splitting responsibilities, rather than only one - a national body. The national body should be assigned to monitor and evaluate the execution of measures at a regional level, while regional bodies should focus on planning, decision-making and implementation. This might enhance performance efficiency because the work of implementational bodies tends to be more responsible when controlled by another body.

However, institutions and organisations that are not necessarily dependent on the decentralisation of Serbia should be supported at a regional and local level. Those institutions are research institutes and NGOs explicitly dealing with mountain issues. The institutionalisation of research is relevant for addressing specific values in Serbian mountain areas, where specific research is the foundation for building specific measures. This might secure the continuous consideration of specific problems instead of it being sporadic. Even though this requires additional effort in organisation and human capacity building with regard to appropriate understanding and competences on mountain issues, the need for employment in this field can also contribute to the attractiveness to highly educated citizens of living and working in Serbian mountain areas and to the improvement of the education-structure of the mountain population.

Special attention should be given to local institutions caring for the elderly such as social and health care. This is due to the high share of the elderly among the population of Serbian mountain areas, particularly in villages. In this respect, tasks are specific and should cover local needs; therefore, it is not necessary to establish institutions that deal with population only in villages, but awareness of their needs is necessary. The awareness should result in enlarging the number of staff and equipping institutions with a sufficient number of vehicles in order to provide mobile services to the less accessible population.

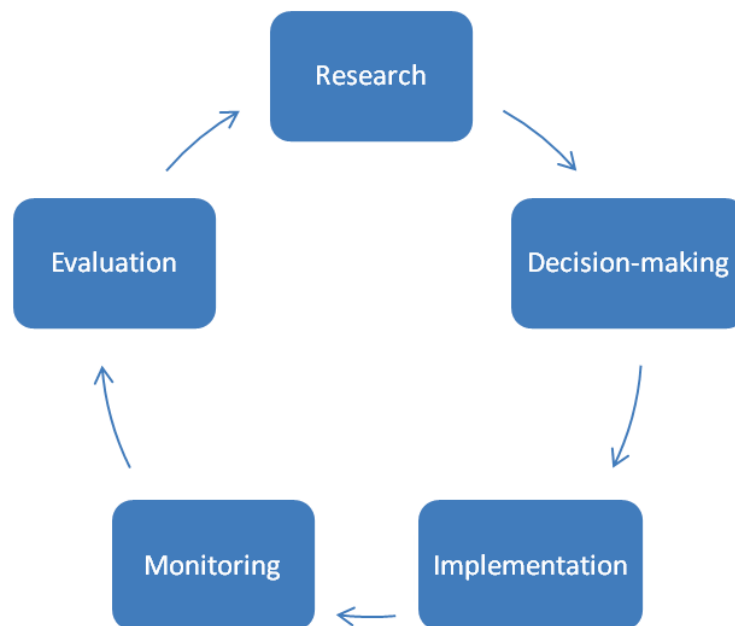
Another issue that should be institutionally covered, whether locally or regionally, is that of emergency services in situations of hazard. Namely, due to climate change, extreme weather conditions occur in Serbian mountain areas: on the one hand torrents and floods and on the other hand droughts and forest-fires. In order to avoid or mitigate their consequences, specific services are needed where their efficiency might be at its best if institutionalised.

Besides organising the institutions at different territorial levels, different institutions should also divide responsibilities concerning Serbian mountain areas. Thus, scientific institutions are supposed to deal with research (fact building); public institutions (actively involving the mountain population) should deal with decision-making and planning; and sectoral institutions should be in charge of implementation, monitoring and evaluation. What is important is that

each stage is covered by one responsible institution and that different institutions are responsible for each stage.

Alongside the decision-making process, population participation should also be enhanced in the implementation phase because personal involvement increases a sense of belonging to a community and decreases alienation from responsibility towards the environment. The benefits of such a multi-level responsibility split are increased efficiency – tasks are completed faster if they are broken down – and institutions will do their work more responsibly if they are aware that their work will be evaluated by other institutions.

Graph 6-1: Stages of Development Management



Source: elaborated by the author

A significantly substantial aspect of institution-building is the establishment of responsible bodies at various levels. Even though innovations and the introduction of new models require more efforts to coordinate and stabilise, it is of utmost relevance to adopt decentralisation of institutions in traditionally centralised Serbia (Damjanović, 2003). The regionalisation that is taking place in the current transformation of Serbia is one of the aspects aimed at achieving multi-level responsibility. The prior need for such institution-building is the establishment of efficient networking and cooperation between the institutions at each stage as shown in Graph 6-1.

6.1.1.3 Role and Improvement of Financial Management of Serbian Mountain Areas

The examples of most European mountain countries analysed for this dissertation where they establish mountain funds parallel to legislation – Austria, France, Italy, Switzerland and Bulgaria – indicate the relevance of clear perspectives in funding mountain development. Additionally, the success of international cooperation between Alpine Convention member countries is related to the specific measures and common fund they have established. Also, the United

Nations stated that the traditional approach of financing mountain areas is not acceptable anymore under a common umbrella with other initiatives because their specifics and complexity (development and protection) demand the mobilisation of funds to directly treat problems in mountain areas (UN, 2000a). Moreover, the specific character of mountain areas e.g. higher costs for infrastructural endowment can be better overcome if the annual budget is clearly defined.

In contrast to this, governmental actions in Serbia are characterised as spontaneous and it is not transparent what amount of resources is used for which set of actions, neither are funds explicitly established for mountain area development. This indicates that according to the experiences of other European countries and recommendations coming out of international discussion, Serbian mountain areas need a specific set of measures combined with an explicit mountain fund.

In favour of this action are the testimonies of local authorities in Serbian mountain areas that are too financially weak to treat all necessary problems and they are not even capable of financing development plans or strategies⁷¹. Local institutions such as Centres for Social Work⁷² are not financially and technically capable of offering equal services to citizens in remote mountainous settlements and in municipal centres. Also, the population in mountain villages needs financial support in terms of loans and credit as motivation for further investment in agricultural production. Therefore, the establishment of a mountain fund at a national level and more accurately planned distribution of resources both to the local authorities and mountain inhabitants are needed to make successful steps towards development.

This also highlights the topic of multiple tiers of financial management. Namely, the United Nations study (UN, 2000a) confirms the relevance of establishing mountain funds at more than just a national level. Again, the examples of the Alpine Convention member countries show that they have established funds from the international to local level. Usually, internationally organised funds are of great relevance for natural protection and global awareness on the issues for which the borders between states are not applicable; national funds are to support measures on the improvement of living conditions in mountain areas and other measures that might retain the population in mountain areas; regional funds are used more to specifically adjust measures from the national level to the regional situation; and finally, local authorities need their own funds to take care of issues which are of very local interest and benefit.

Since Serbian mountain areas are in need of each of those fields, financial management should eventually be organised at each of the levels. However, it should be started with financial management at a national level, so that funds can be further devolved to the local level. This should be followed by arranging financial management for international cooperation and, if the chosen model of decentralisation allows, by financial management at a regional level. Changes

⁷¹ According to an interview with the Head of the Municipal Authority and Secretary in the Local Assembly of the Crna Trava Municipality (conducted in July 2009).

⁷² According to an interview with the Team Coordinator for the Protection of Adults and the Elderly at the Centre for Social Work Užice (conducted in December 2009); the Director of the Centre for Social Work Kuršumljija (November 2009); the Sociologist in the Centre for Social Work of Knjaževac (conducted in December 2009).

in the fiscal system in Serbia were also discussed and advocated at the Conference on The Fiscal Decentralisation Initiative (PALGO Centre, 2001) and a study by USAID and MEGA (2008). It was said there that a municipality is a basic unit of civil society, so the financial resources collected and generated at that level belong to its people and local authorities. This is the path Serbia should take, which is also advocated by Levitas (2008), who stresses the necessity for devolvement of fiscal jurisdiction to the municipal level. This further indicates that efforts towards the fiscal decentralisation of Serbia should inevitably take place right after consolidating financial management issues at a national level.

At a national level, the Serbian government should consider planning part of the budget for participation in international cooperation. Even as part of the Carpathian Convention, Serbia has not financially supported its membership (Carpathian Convention webpage, 2011b) and with regard to Serbia's generally low economic power, it is estimated that the government would prioritize expenses within its own borders. However, the priority in expenditure for Serbian mountain areas should be a national framework, clear policy and the financing of direct allowances to the mountain population. The national framework should be of utmost concern because international cooperation can be a waste of time and resources without previously set national goals and priorities with regard to its mountain areas. Direct investments in mountain populations are specifically relevant as a prompt reaction that will be easily recognized by the population and motivate them not to leave mountain areas. Based on interviews with local residents in Serbian mountain areas, they have high expectations to be financially and economically supported by the government, but on the other hand they doubt the government's responsible actions and sincere understanding of the situation. Therefore, this manner of support might have the greatest effect on demographic structures and the economy of Serbian mountain areas.

One part of the Serbian budget should be assigned to municipalities in order to support actions of public interest e.g. "help at home", retirement homes, educational courses, road infrastructure, raising awareness on climate change, environmental protection (e.g. erosion protection) and spatial planning. Another part of the national budget should be set as direct support for households and individuals in mountain areas to support (organic) agriculture and eco-tourism, the establishment of small businesses (diversification), refurbishment of homes and traditional buildings within a household, endowment of internet connection, computer equipment, etc.

At the level of financing, interviews with national experts have indicated that mountain area financial management necessitates synchronisation between the budget and plan horizons. The common practice is a division between the creation of funds and strategic/spatial planning/programming, which leads to uncertainty in implementing measures. Therefore, cooperation and even legal regulation between fund and plan horizons needs to be established on a regular basis.

Due to budget limitation, it is necessary to establish priorities and clear conditions within the financed categories. Thus, Serbian mountain agriculture should adopt and adapt the system of farming zones and direct support to farmers following the system in Austria. Four to five zones

should be delineated according to slope, soil type and altitude; each zone should be categorised by difficulty level for infrastructure building; and the value of the allowance should increase with an increase in the difficulty level. Households must be registered as agricultural in order to obtain this type of support, which can be expected to focus financial resources on interested farmers, thus enhancing commercial agriculture.

Additional criteria for direct allowances can be families with children, production in organic agriculture, small industries and soft-tourism. With regard to soft-tourism that is, for example, based on the promotion of cultural and traditional patterns of living and production, allowances should primarily support households with traditional types of architecture. This would simultaneously support families in mountain areas, diversification of economic activities and threatened cultural heritage.

Proportionally higher taxes in areas with less difficulties and limitations should be of help for populations in mountain areas to both lower their living costs and contribute to a budget that will be used for their development and protection. Additionally, establishment of a fund for mountain areas should trigger transparency and improve the ad hoc approach towards planning and goal oriented activities. While strengthening other sectors in dealing with mountain areas (e.g. non governmental and private sectors), financial support from the national government appears as the only source with explicit intentions.

Serbia is not part of the EU and therefore is not eligible to use EU structural funds. Nonetheless, with the status of an accession country, eligibility opens for EU funds such as IPA (Instrument for Pre-Accession Assistance). The fund is constructed for strengthening institutional capacities, cross-border cooperation, economic and social development and rural development. In general, all those topics overlap the needs of mountain areas. Donations from out of the country currently play a significant role, for example the Fund for Social Innovations is only 20 % financed from the state budget and 80 % from foreign sources⁷³, which indicates that acting responsibly with donations, having clear objectives in their spending and adapting to international standards can contribute to gaining resources explicitly for Serbian mountain areas.

Often, municipalities which are economically endangered are also demographically hindered, which indicates that support from outside is necessary in more than one aspect. Support from outside of municipalities includes both state and foreign donations; nevertheless, both of these show rather different approaches: the national fund requires no transparency and tracking of what the support is genuinely spent on, while foreign donators demand a much higher level of responsibility from the recipients of the support. The second approach will inevitably be applied to national funds, too. Certainly, multiple sources of financing are also the best option and the synergic impact of private, public, donated and foreign funds gives the strongest support. In

⁷³ According to an interview with the Manager of the Research and Development Department and the National Team Coordinator for Monitoring and Evaluation of Social and Health-Care Services for the Elderly, in the Republic Institute for Social protection (conducted in June 2009).

addition, the Serbian state can support establishment of thematically specific NGOs that would take the role of financial mediators between donations and mountain communities.

6.1.1.4 Role and Improvement of the Strategic and Spatial Planning of Serbian Mountain Areas

The role of strategic documents, whether comprehensive or sectoral, is to set a framework and a vision for mountain policy, in this case policy for Serbian mountain areas. It is also an instrument for setting long-term goals and principles. Spatial planning in Serbia is an instrument that deals not only with land-use issues but in contrast to strategies integrates all relevant aspects of development and protection: nature, culture, environment, population, settlements, economy, infrastructure, etc. An additional characteristic of spatial planning is the vision for the long-term horizon, but also the planning of mid-term programmes. Starting from a visionary view of the future, spatial plans concretise actions, linking them to locations and finally operationalizing the highest priority actions with regard to the mid-term horizon.

Some aspects of strategic and spatial planning in Serbia should be improved, particularly with regard to mountain area development. The first aspect to improve is the responsibility of those in charge of implementing these documents, particularly with regard to responses. For this reason, planning remains formal and fictive instead of applied in reality. Therefore, as already described in relation to institutional improvements, all stages – from research to evaluation – need to be improved in the planning process, too.

The other aspects that should be improved are sectorally prepared short-term (annual) programmes. Actually, short-term programmes are a problem for their users (mountain population) who cannot adapt to annual changes of subsidies in production and economic activity and where one year of implementation is not long enough for the evaluation of results. Thus, each following programme cannot improve according to the gaps left by the previous one. With regard to their sectoral character, programmes as such correspond only to assignment of a specific ministry. The Director of the Republic Agency for Spatial Planning of Serbia⁷⁴ stated that responses in spatial plans are not supported by other sectoral policies of the Republic such as those of a social, economic or demographic nature. An integral approach is assigned by the Republic Agency for Spatial Planning (spatial planners) while the actions of ministries are based on sectoral, politically driven decisions. The result is that the priority for each ministry is to carry out their own policy, taking no account of the measures stated in spatial plans.

The other obstacle highlighted by this interviewee is the application of a multidisciplinary rather than interdisciplinary approach. This means that each expert in a spatial planning team brings up perspectives related to his/her own topic (e.g. nature protection, demographic development, social services) regardless of other fields of expertise. In some cases this results in dismantling the demographic processes while planning economic development – projecting economic perspectives beyond population capacities, aging, depopulation, emigration, etc. Besides good communication within a team, it is relevant to establish cooperation between

⁷⁴ Interview was conducted in June 2009.

teams of planners as experts and government institutions as political decision-makers and executors.

The interdisciplinary approach should also include recently stressed topics world-wide and in European mountain areas – climate change and landscape architecture. The Spatial Plan of the Republic of Serbia has brought these issues on the table and it is important they are consistently continued in other strategic and planning documents at all territorial levels equally – national, regional and local.

The Leading Spatial Planner in Užice⁷⁵ stated in an interview that demand for conversion of agricultural land into building land has increased in spite of the analysis result showing that the capacity of existing residential areas corresponds to the population size. This indicates that land resources in urban areas are not properly used and that this aspect should not be neglected in future spatial plans. For this purpose, the update of constantly changing data bases such as cadastre registers requires efficiency in recording the situation regarding land ownership, size of parcels and their actual purpose of use.

Besides the improper use of urban areas, there are also problems indicated in rural areas. Namely, plans of detailed regulation are assigned only for urban areas – cities and towns, but not for rural areas. This is one of the reasons why mountain villages were kept so long even without basic infrastructure – water and sewage supply, electricity and waste management. Therefore, plans of detailed regulation in spatial planning should be widened also to rural areas and settlements outside of municipal centres.

With particular regard to Serbian mountain areas, spatial planning documents should integrally and holistically approach their development instead of taking only high mountain areas into consideration or only their natural advantages. The population that lives in the valleys of Serbian mountain areas faces problems characteristic for the mountain areas even though they are inhabited at lower altitudes. Therefore, the holistic approach should be applied in this case as well.

Finally, interviews with local populations⁷⁶ also indicate some of the gaps in the process of planning in Serbia which are certainly to be changed in the future. Namely, most interviewees in mountain villages were not aware that they live in an area arranged by a spatial plan or that they were in the vicinity of one; even those who have heard about the spatial plan did not know what was in the plan. Thus, spatial plans might bring change for politicians and local authorities, but the engagement of private individuals is diminished. However, there are also a few cases of dwellers who have undertaken certain actions. The problem can be overcome by the active involvement of the local population in decision-making from the very beginning, and informing the local population should be part of the procedure. However, to turn this goal into reality, it is necessary to raise the awareness of strategic and spatial planning as an instrument and inform mountain populations as to what their input can be.

⁷⁵ Interview was conducted in July 2009.

⁷⁶ Interview was conducted in September 2009.

6.1.1.5 Aspects of Instrument Application – Towards Enhancement of Serbian Mountain Area Management

The previous paragraphs of this section show that the existing instruments for mountain area development can be assigned different time-horizons and territorial levels for their realisation. With regard to time-horizons, instruments can target short-term (annual), mid-term (four to five years) and long-term (more than 10 years) horizons, while the territorial level can be created internationally, nationally, regionally and locally.

Table 6-1 shows all the instruments and all their possibilities with regard to the time-horizons and territorial levels, based on the experiences of all the European mountain countries analysed for this dissertation. In the first group there are instruments which are also applied in Serbia, marked with fields in the dark shade of blue. Hence, strategic and spatial planning are the only instruments in Serbia that address Serbian mountain areas explicitly. Nevertheless, the fact that they have been implemented recently has resulted in aspects that should be improved upon such as the strengthening of an integral and holistic approach, the transition from formal to applied instruments and development at an international and regional level.

Table 6-1: Aspects of Instrument Application

Instruments	Time-Horizon			Territorial Level			
	Short-Term	Mid-Term	Long-Term	International	National	Regional	Local
Legislative							
Institution-Building							
Fund Management							
Strategic and Spatial Planning							
Local Population Participation and Local Initiatives							

Instruments applied in Serbia and other European mountain countries
Instruments applied in other European mountain countries. Legislatively applicable in Serbia, but not applied
Instruments applied in other European mountain countries. Legislatively not applicable in Serbia
Instruments applied neither in Serbia nor in other European mountain countries

Source: elaborated by the author

Another group of instruments is those that are applied in other European mountain countries – the current constitution and legislation in Serbia allows them to be implemented, but they are not. In Table 6-1 they are marked by a lighter shade of blue, including legislative and institution-

building instruments at each level and, as already mentioned, spatial planning at an international and regional level.

The green in Table 6-1 indicates a third group of instruments: those that the current constitution and legislative framework of the Serbian state do not support. Those are legislation at a regional level, financial management at a regional and local level and local population participation at all levels. Since the relevance of financial management and the independence of local communities have been shown to be inevitable in the successful development of mountain areas, those are exactly the aspects Serbia should work on and develop in order to secure positive perspectives. Relevant aspects of local population participation are presented in the following section.

Certainly, what should be aimed at in the development of Serbian mountain areas is that the instruments applied cover all time-horizons and territorial levels at once, starting from long-term horizons to short-term planning and primarily covering the national level, secondary local level and finally regional and international levels.

6.1.2 Establishing Instruments

As indicated in Table 6-1, local population participation is the only instrument that has not been practised in Serbia, including its mountain municipalities. In addition, the analysis in the previous chapter has shown the considerable importance of applying this instrument, therefore, its role is presented in the following paragraphs. Alongside this topic, the special status of mountain areas is also discussed in order to prove its role in the case of Serbian mountain areas since it has been already practised in other European mountain countries.

6.1.2.1 Active Participation of the Local Population

The recommended principles such as subsidiarity, public participation, a bottom-up approach, indigenous development and decentralisation are most reflected in the instrument of local population participation and local initiatives. The Berchtesgaden Declaration states that delegated power and decision-making in the hands of local authorities best reflects the needs of communities and that “legally binding instruments are not efficient without strategies with active participation...” (lib.icimod.org/record/11095/files/366.pdf, July 2011). Defined as development rising from traditional knowledge and experiences (among others), it can be noted that the Berchtesgaden Declaration advocates indigenous development as do many other international documents – the Alpine and Carpathian Convention, ESDP, Territorial Agenda and Guiding Principles. It has been proved that communities with higher engagement of the local population achieve better results in the sphere of economics and public services (Kaufmann, 2007). Finally, up to here, the analysis has shown that the bottom-up approach and public participation in decision-making are crucial factors in Alpine countries, too.

Certainly, fulfilment of subsidiarity, the bottom-up approach and decentralisation depend on the level of public participation allowed and the real willingness of mountain populations to be actively involved. Decentralisation of jurisdictions and involvement of different sectors and stakeholders are still discouraged in Serbia. An interview with the Consultant for Rural

Development⁷⁷ indicated awareness on the topic of stakeholder involvement and the combination of a bottom-up and top-down approach, which is the first step in their comprehensive acceptance of overall sectors and practice. Currently, local strategies are responding to expectations of the state rather than to the local population, which must be changed in order to achieve the mentioned principles.

As indicated in Table 6-1, local population participation and local initiatives are the weakest instruments in Serbia. Moreover, they have not been applied at any of the territorial levels and can be only recognised in a testing phase in the form of NGO mediation between the local population and national government. However, direct and actual intervention of the local population is not allowed. Due to never really having this option, interviews with the local population in Serbian mountain villages showed that potential for self-organisation and strategic thinking is lacking. Therefore, it is a challenge to successfully realise principles such as subsidiarity, public participation and a bottom-up approach before informative and educational opportunities and background are improved.

Therefore, the principle “knowledge as the foundation of development” should not be omitted, which means that those who decide about development have to have a certain level of knowledge. The information sharing, education structure and involvement of the mountain population are so far the weakness of Serbian mountain areas. The motivation of the mountain population to get involved with tourism, organic production or forestry, according to interviewees, depends on examples from the local area; thus, interviewees that are eager to start tourist activity are those who know that their neighbours have already practised it. It has also been stressed already that there are cases in which the idea and willingness for certain action exists (know-what), but knowledge and information on how it can be realised is missing (know-how). Therefore, the results in any future development cannot be based solely on changes in the level of decision-making, but with necessary reform of education, life-long learning and a system of information dissemination.

Used to a passive role, the politically inactive part of Serbian mountain areas tends to stay passive in the matter of participation in planning, decision-making and creation of projects. However, there must be a section of the population that is going to be interested in adopting knowledge on new approaches and opportunities. This sample of the population should be taken as a learning group in the first stage, but which still requires motivation to participate the learning process by free participation fees. In time it is expected that the number of interested participants will spread, finally embracing the majority of the population.

Participation should primarily increase with regard to local projects and self-organisation of communities, but also by contributing to the creation of strategic and spatial planning documents. Organised courses via formal and informal education, as well as via the internet, should be sufficient for obtaining knowledge in project participation. But, in order to

⁷⁷ Interview with the Consultant for Rural development, Sector for Rural development, Ministry of Agriculture, Forestry and Water Management (conducted in June 2009).

strengthen participation in creating state documents, a legal procedure is required to enable a more active role of the local population at a national, local and potentially regional level.

6.1.2.2 Assignment of Special Status to Serbian Mountain Areas and their Population

The number of inhabitants, population density, infrastructural conditions and economic opportunities (living conditions) are different in lowland villages than in mountain areas. Moreover, Stojanović (1990b) argues that demographic structure depends on the character of demographic factors themselves and geographic factors such as geomorphology, soil structure, hydrology etc. Thus, the author relates a decrease of demographic capacity (aging, lowering of density, depopulation, etc.) to the increase of geo-physically unfavourable conditions. With regard to this, a comparison of lowlands and mountain areas shows that aging indicators (percentage of 65+ population, old-age-dependency ration and aging index) record a greater increase (1981-2002) in mountain areas (Pantić, Živanović Miljković, 2010).

Analyses in a whole range of strategies (National Strategy for Sustainable Development (2005b); Regional Development Strategy (2005); Rural Development Strategy (2009), Spatial Plan of the Republic of Serbia (2010)) and studies (e.g. the Small Rural Households in Serbia and Rural Non-Farm Economy (Bogdanov, 2007); and the Rural Development Strategy in the Republic of Serbia (GRS, 2009a)) address hilly and mountain areas as areas of specific geographic conditions and a higher extent of social, infrastructural and economic problems. In both studies, hilly and mountainous areas stand out as a particular category, based on specifics such as significant natural resources and reliability on them, as well as demographic, economic and infrastructural hindrances.

Mountain areas are noted as areas of particular natural value. Due to their isolation, ecological systems are significantly preserved, keeping them as “centres of biological diversity and landscape value” (Bryden, Van Depoele, Espinosa, 2005, p. 3). Mountain areas gain particular credits for being “water towers” (water reservoirs), sanctuaries for wild animals and plants, natural obstacles for controlling winds and precipitation as well as sources of renewable energy – wind and wood (European Environmental Agency [EEA], 1999; Price, Jansky, Iatsenia, 2004; Bryden, Van Depoele, Espinosa, 2005). Focusing particularly on Serbia, the Law on Nature Protection (2009), Tourism Development Strategy (2005), Spatial Development Strategy (2009) and the Spatial Plan (2010) also acknowledge the specific role of mountain areas in the preservation of endemic species, pastures and meadows of great ecological value and environmental quality in general.

The countries where mountain areas are economically advanced – the Alpine countries – use three options for tackling problems in their mountain areas: they practise national policy specific for mountain areas, they actively cooperate in developing responses at an international level or they practise both. Except for Germany, Alpine countries have developed mountain specific responses at national and sub-national levels, institutions, civil sector organisations, etc. Moreover, the Berchtesgaden Declaration on Mountain Range Regional Cooperation (2002) states setting national mountain policies as a priority for the establishment of cooperation at an international (mountain massif) level. The Alpine Convention (1991) is a successful example of

international cooperation, advocating the principle of cooperation of countries embracing a mountain massif.

Countries with less developed mountain areas - such as Romania, Ukraine and Bulgaria - follow the example of Alpine countries with regard to their particular focus and policy on mountain areas since the 1990s. Particular focus on mountain areas is not only a characteristic of Alpine countries. Namely, with a bill on mountain areas in 1993, a wave of legislative acts started in Bulgaria, later continuing in Ukraine (1995) and Romania (2000). Ten years after the Alpine Convention (1991) had been adopted, the Ukrainian government initiated creation of the Carpathian Convention after a similar model had been applied in the developed Alpine region.

Therefore, being predominantly rural, mountains keep the characteristics of rural areas, at the same time being specific in comparison to lowland rural areas. As rural areas lag behind urban areas and additionally demographic, infrastructural and economic structures lag in mountain villages compared to lowland villages, problems in mountain areas reach a much higher level. Apart from these negative differences, mountain areas stand out due to their environmental value, thus additionally showing their uniqueness. Besides this, some studies use physical-geographic criterion to explain differences with regard to a range of demographic, economic and infrastructural indicators. Further, if developed countries are taken as examples to look up to, then mountain areas are commonly recognised as particular entities – precisely defined and responsibly treated. Moreover, focusing on mountains has recently become a practice in countries that have recently gone through or still are dealing with economic transition, as is the case with Serbia. Therefore, with regard to (1) demographic, infrastructural, economic and environmental indicators, (2) Alpine country practices and (3) practices in similar circumstances to Serbia (Carpathian and Balkan Mountain Massif), Serbian mountain areas should be assigned the status of special areas.

For gaining special status, Serbian mountain areas would need clear delimitation in order to make clear to which territory the status refers. In both cases (one or more country - one definition; one country or region more definitions), diverse delimitation actually corresponds to goals set and the main purpose of definition. Thus goals set in international projects and studies, such as the NORDREGIO study on mountain areas (EC, 2004) or the Carpathian Convention (2003), require an internationally common definition, while nationally set goals correspond more to the needs of national strategies, policies, programs, etc. Therefore, the use of different delimitations for implementation of the Alpine Convention (1991), regional plans or associations of mountain municipalities is justified as far as the definitions are clear, based on relevant criteria and adjusted according to purpose. However, appropriateness of a definition cannot be estimated without putting it in to the context it is prepared for.

In summary, there is no implementation of chosen responses if mountain areas are not previously defined. The main factor for testing an appropriate definition is its adjustment to a goal, which means that definitions are not equal for each piece of research, study, policy, etc. (EC 2004). However, institutions dealing with mountain areas should share their knowledge on the delimitations used and applied by other institutions. Further, approaches before delimitation should be thorough in order to build a well grounded definition with long-term

applicability. This is primarily because monitoring cannot show a development trend by measurement on short-term bases which would, by giving fewer results, diminish the efforts of implementation, planning and finally evaluation of the results. Besides similar/the same choice of criteria for delimitation at an international level, it is important to apply a holistic-integrated approach – taking more than one criterion into account – with particular relevance of the administrative division (Price, Lysenko, Gloresen, 2004). A common example found in literature is the definition of an Alpine region for the Alpine Convention (1991) – integrating geomorphologic, administrative, political and functional criteria. Besides the relevance of the complexity of criteria, a definition makes sense only if it is clearly defined. This is primarily in relation to the basic spatial unit chosen that depends on the purpose of the definition, but in general gives a greater contribution when it is more detailed (better at lower a level) (EURAC, 2006). In the study on delimitation of the Carpathian Convention area, the importance of non-fragmentation is additionally stated, arguing that treatment of a fragmented territory harms implementation and its results. Finally, a definition must make one mountain area comparable to other areas, especially in other countries and in common projects. In the case of Serbia, this is primarily according to the Carpathian Convention where the current definition is based on rather limiting criteria.

The establishment of a definition of Serbian mountain areas can be done by delimiting mountain ranges, municipalities and parcels. Each level is applicable for different occasions and adjusted to different goals: delimitation of mountain ranges (massifs) is of utmost relevance for international cooperation; defining mountain municipalities is important because they represent the lowest level of governance, thus being the most appropriate mediator to the level closest to the actual problems and to mountain citizens; finally, the zoning of agricultural land and definition of mountain parcels corresponds to the needs of support for agricultural production. However, it is important not to repeat the mistake of delimitating the Carpathian mountain area for the purpose of the Carpathian Convention.

6.2 Role and Enhancement of Accessibility and Infrastructure in Serbian Mountain Areas

The improvement of accessibility to isolated areas in the Swiss Alps and other Alpine countries has been considered as a crucial element for development since the middle of the 19th century. At that time it was for the development of tourism, however, besides tourism development, transport infrastructure is also considered as an inevitable condition for the development of industries and trade (Permanent Secretariat of the Alpine Convention [PSAC], 2007). Nowadays, investment in the infrastructure in the Alpine region is still intensive, resulting in a higher network density than the European average (PSAC, 2007), which makes the Alps stand out among other European mountain countries. The mobility of people and products depends on the transport infrastructure and its quality (International Road Transport Union [IRU], 2000); therefore, infrastructure is a necessary factor for development.

A car is the prior choice of transportation (PSAC, 2007) due to the flexibility in its use independent of a schedule. The significant parts of Serbian mountain areas are not in danger of environmental pollution caused by frequent road transport due to their remoteness, therefore, construction of roads and enhancement of their quality in Serbian mountain areas should be

one of the priorities in solving functional relations between those and more urban areas and for the increase in mobility of the population, products and tourists.

In addition, the introduction of new, non-traditional, activities also means additional qualification for potential workers, particularly for production competitive on the market. The indication is that diversification and new job opportunities requires not only physical accessibility and infrastructure, but also accessibility to knowledge and education infrastructure. Similar to information accessibility, the education structure has been so far shown as a weakness of mountain areas, therefore, the population in Serbian mountain villages needs more input on know-how regarding tourism, organic production or forestry, what spatial planning is, participation in strategies and plans. Also, the rising awareness on sustainable development is important for an overall understanding of preservation and development and can be embedded in reality only after being embedded in the education system (FAO, 1996; Messerli, Bernbaum, 2004). Besides sustainability, mountain areas are inevitably concerned with an additional range of topics such as demography, the economy and climate change. Since those are processes impacting the environment and population and which can also be influenced by the population, it is of utmost relevance to inform mountain citizens about the qualities and quantities of those changes in order to enable their adaptability (Price, Jansky, Iastenia, 2004).

Adaptation is one part of the process and reaction is the other: the local population is in the first line for identification and implementation of measures in case of floods, forest-fires, illegal building, etc (Starr, 2004). Land-use change can also be listed in the series of changes (Bieberstein Koch-Weser, Kahlenborn, 2004). Therefore, the range of topics that mountain populations need to be informed about and educated on is diverse.

For the listed reasons, the following paragraphs are devoted to the possible role and benefits of enhancement of road infrastructure, education and access to information for Serbian mountain areas and their population.

6.2.1 *Enhancement of Serbian Mountain Area Transport Infrastructure*

Transport infrastructure is necessary for local population mobility (travelling to other settlements for use of services, facilities and job offers that are not provided in the place of living) and for the economic development of a municipality itself. When considering the opinion of the local population in Serbian mountain areas and failure of the Alpine light railways connecting each settlement, it appears that road infrastructure should be the priority rather than railways. Namely, the road network in Serbia, developed as it is, takes less time and finances in order to improve mobility and accessibility of rural areas because its network is significantly more developed than the railway network. The focus should be on enhancement of its quality and maintenance. Therefore, the first phase of mobility and accessibility improvements should be focused on existing roads, including their quality and maintenance.

The eligible ways of collecting financial resources for transportation infrastructure are a toll system, registration of vehicles and fuel taxes. This is not a new invention for Serbia, but is certainly the one that requires more transparency on resources collected and results that

follow it. Therefore, reformation of institutions dealing with the transportation infrastructure requires clear division of responsibilities on money collection, construction of roads (including additional infrastructure) and road maintenance, such as in the example of Switzerland where the government is responsible for corridor planning, while cantons are responsible for construction and maintenance.

Since Serbia has not introduced a vignette toll system, financial resources in the first phase should be collected via tolls, the price of which depends on the number of days it is valid for and also on the vehicle type – with private vehicles charged less and freight vehicles charged more. Actually, the charge should increase with an increase in the pollution a vehicle makes. In addition, vehicles registered in a mountain municipality should not be charged at all or at least at a reduced rate. This would prevent facing more accessibility problems than there already are. In the second phase, the resources collected should be used for the introduction of a vignetting toll system which can be similarly differentiated (by private, freight and local vehicles), but more fair because it will be more precise by charging driven kilometres instead of days.

The relevant financial resources for road construction in Serbian mountain areas can also be assigned from EU funds, particularly the IPA, which indicates that these resources should be systematically planned and spent on modernisation such as the introduction of a vignette-system (charging tolls), which appears more practical and faster for passengers than the existing ramp-system. This type of innovation can also make Serbia more attractive as a transit corridor, thus increasing the resources collected by toll charges.

There are two additional aspects that should be taken in account: cooperation between national and local institutions for road and railway construction and maintenance and specification of measures. In economically strong Switzerland, tolls collected via charges on road traffic significantly contribute to railways that take over the role of freight transport, which can be implemented the other way around in Serbia by cooperation between its public company of road infrastructure and public company of railway infrastructure. Therefore, networking and active cooperation between complementary institutions in Serbia are important for more balanced infrastructural development. Also, Serbia should overcome the absence of institutions responsible at the regional and local level.

The other aspect – specification of measures – should contribute not only to collecting resources for road development and maintenance, but also to stimulating desirable means of transport and simultaneously discouraging the greatest polluters. Actually, similar to the model of some Alpine countries, the toll system on motor ways should be differently charged: public transport can be free of toll charges, private vehicles can be charged lower prices, small trucks higher and the freight transporters the highest charges. In addition, private cars can be charged in naturally protected areas if they are not registered in any of municipalities from the area. By those measures, the resources for road construction and maintenance are collected and the impact on the environment diminished.

The mobility of Serbian mountain populations can also be improved by flexible individual transport (car) and particularly important public transport by buses and taxis. Environmentally friendly transport favours public transportation means over private/individual, but, as previously stressed, in low density areas it is often discouraged due to high costs. Transportation vehicles which are used for combined purposes at the same time can justify (decrease) costs and at the same time increase mobility opportunities in low density areas. One possible combination is a bus or mini bus that transports post, groceries, medicines, pupils, workers and even tourists. In the case of grocery and medicine transportation, vehicles need additional adaptation to ordinary passenger buses; however, the investment makes a long-term contribution. The national government should assign a budget for municipalities and municipalities themselves should support forms of public transport.

Some of the mentioned services are needed on a weekly basis (e.g. post), daily (newspapers, bread, milk, etc.) or twice per day (e.g. transport of workers and pupils). Nevertheless, some transportation is not related to a particular time that fits the schedule of bus lines. For those inhabitants who do not own a car or are too young for a driving licence it is necessary to establish alternatives to ordinary bus connections. Following existing examples in some Alpine countries, the solution can be transportation on-demand. Namely, the municipality is in charge of providing a certain number of mini buses and/or taxis which drive when booked in advance. The taxi stops and time-schedule are defined in advance, but the vehicle comes only after it is arranged by phone. The price of the ticket is also predefined. What has been shown as relevant in making mountain areas attractive for living is that additional discounts should be assigned to pupils, students, the unemployed and other vulnerable groups, which can be subsidised by the state and/or municipality.

Besides the relevance of public institutions, the local population should also be involved in the decision-making process. In the implementation of mutual projects, the main stakeholders and others involved are national ministries, state governments and regional institutions for civil engineering. But a part of the role is to be played by public-private partnerships, specifically with regard to organisation and synchronisation of a schedule that is supposed to correspond to citizens' needs.

The ideal of supplying each household with an asphalt road and other forms of technical infrastructure needs to be rationalized because of the costs, which means that selection of households needs to be limited. Households and entire villages of elderly residents are cases in which specific social services should be stressed, particularly mobile health-care services and possibly retirement homes in the relative vicinity. On the other hand, their endowment with asphalt infrastructure would most probably be high expenditure that can be of use for a short period of time – until the last inhabitant leaves his/her home. Therefore, their construction should be reduced to municipal centres and settlements with population apt to self-organisation and preparation of a reliable strategy/project for their development in the future. Investment in municipal centre infrastructure helps the population to stay in the local vicinity rather than emigrate to a few regional centres or the capital. Communities apt to self-organisation are prevailing settlements with younger residents, but also settlements with

natural and cultural resources for development of small industries and/or tourism. The two types of settlements are expected to have a potential for the commercial economy that should be supported by the necessary infrastructure.

So, the conditions for mobility, accessibility for tourists and exchange of resources and products in Serbian mountain areas are transparency and clear responsibilities of public institutions at a national, possibly regional and certainly local level and also consultation with the local population. The quality and maintenance of road infrastructure should be modernised (e.g. the vignette system) and defined more specifically in order to provide both financial resources and environmental protection. Finally, besides subsidies from the national and local budget, citizens of sparsely populated mountain settlements should have a system of public transport on demand and transportation with combined purposes, which lowers the costs.

6.2.2 Human Resource Improvement by Knowledge, Education and Innovativeness in Serbian Mountain Areas

Decision-making used to be (in the period from 1945 to the end of the 1990s) primarily the task of the Serbian national government, thus controlling various aspects of the society. These conditions resulted in local communities which rely on decisions, guidelines and help from the top, and they have significantly kept those expectations nowadays, too. This fact conflicts with the need for actions based on their internal choices, initiatives and actions. Therefore, knowledge and skill empowerment of the population requires comprehensive support from all possible sources, starting with the public sector and NGOs. Support in organisational matters (workshops, formal and informal education adjusted to the process, training, etc.) and financial matters is inevitable for the initial phase. This is predominantly in relation to the high unemployment rates and generally low financial power of the Serbian mountain population.

The rights to information access and education are recognized as basic human rights (United Nations, 1948) which are as such confirmed by a series of national constitutions, including the Constitution of the Republic of Serbia (National Assembly of the Republic of Serbia, 2006). However, as analysis has shown, it is not the case for the population in all areas to equally obtain information and education – usually, rural and isolated mountain areas in Serbia are characterized by lower accessibility, availability and quality. The education quality and in some areas absence of social and technical infrastructure, telephone, cell phone network, broadcast and internet are problems that populations in Serbian mountain areas are facing.

Therefore, access to information and education is a basic right that the state Government has to provide. This is a task in which to engage a series of efforts and overcome a range of organisational and financial challenges. Induced by low population density and few opportunities for employment, the main challenges are: accessibility to information and education; equal tuition quality (equipment and teaching personnel); social exclusion from education and training offers of the population in poor and high unemployment areas (e.g. special education courses for re-qualification); young ambitious people who have gained basic and/or intermediate education leave mountain areas because of (better) job opportunities in other areas; and the opportunity for the bottom-up approach and population involvement can

be misused if the population is not familiar with regulations, best practices, strategic planning, etc. It is similar to the provision of teaching staff and tuition equipment, which cost more when provided for schools with only a few pupils instead of hundreds.

The computer as a tool, particularly combined with a fast internet connection, brings various improvements in access to information and provision of education. First, the tool can be used to present lessons to the pupils in a more interactive and attractive manner, as well as easing the process of memorising by visualisation. Second, a computer with an internet connection is a source of literature which is usually not available in small and isolated areas, offering parallel possibilities for distance learning, thus overcoming ordinary difficulties such as travel, time and financial costs. Third, it eases networking and exchange of experiences between schools, museums, teachers or any other association of individuals or groups. Fourth, the flow of information via the internet distributes information equally fast to mountain areas as it does to densely populated areas. This makes the physically isolated population equal to citizens in other areas, at the same time providing relevant information about political decisions, spatial plans, strategies, subventions, rights, obligations, etc. Fifth, the participation of publicity and surveys on public opinion can be conducted at lower costs (online). Last but not least, economic chances improve due to the possibility for online marketing and selling of products, as well as self-employment online (Price, Houston, 2001).

Therefore, in order to increase the role of IC technologies in education and provide access to information for mountain communities, it is necessary to introduce computers as standard equipment in schools, to organize free courses for teachers so they learn to use computers and software themselves and then transfer the knowledge to pupils. Mountain populations can also gain computer and internet skills by e.g. high school pupils who might take on a voluntary teaching role during their summer holidays and in exchange get the opportunity to spend some time in the countryside and in contact with rural culture. In addition, the electricity needed for computer laboratories can be provided by solar panels when there are difficulties with the quality of the power.

The full proficiency of computers will be achieved by provision of the internet. Since slow and interrupted connections can be demoralising, in the Key Issues on Mountain Areas (Messerli, Bernbaum, 2004) broadband coverage is highly recommended, which should be applied in Serbia, too. Additional reason for high speed internet provision is distance education, impossible without secure and efficient data flow. Distance education can be available for all stages of education; however, it should be avoided if possible in obligatory and secondary education where relevant processes of socialisation, interaction, team work and practical skills are to be obtained. In contrast, the full advantage of distance learning is to be realized for university studies and lifelong learning education. Moreover, telecommunications or conferences via Skype can easily enable experts such as lecturers to speak directly to pupils in remote areas.

Absolute internet coverage in Czech mountains is an example that showed this does not necessarily mean that 100 % of the population uses the internet. Therefore, endowment with an internet connection should be accessible to households interested in using it. These

households should be a priority, but at the same time, it is relevant to put effort into educating all mountain citizens on the advantages of computer and internet use.

Computer equipment and a broadband connection enable networking between individuals, schools and museums with institutions from the same area or other complementary areas (Messerli, Bernbaum, 2004). Therefore, Serbia's eligibility to use EU funds such as IPA or projects funded by the EU e.g. INTERREG III that favour action based on cooperation topics can result in financial support from those sources.

The practice of some countries defines the minimal number of pupils attending a school in order to keep the school functional (e.g. five pupils in Austria) (Bauernebel, 2008). In Serbia, it is not the case, however, the ministry in charge is able to close down schools and redirect pupils to other settlements to continue their education (Milanović-Hrašovec, 2009). In the opinion of school principals and experts who deal with this topic in Serbia, keeping small schools in work, even though they have one or two pupils, is more rational than closing them down. The reasons are higher costs to finance transportation than financing only one teacher. Additional reasons are bad road infrastructure, which increases travel-time and very low accessibility of roads in winter – the season of heavy snow-fall (Milanović-Hrašovec, 2009). Thus, they consider that schools should not be closed as long as there is at least one student. This specifically refers to the youngest pupils in the early years of schooling (from first to fourth grade).

The options for the education of a small number of pupils are many, even though the pupils are often at different ages and in different grades. One of the possibilities is that one teacher does all of the work, which requires special teacher training. Namely, the general isolation of such communities and absence of socio-cultural activities make the pupils additionally fragile and specific; therefore, it is expected that teachers working in these conditions should be particularly prepared and go through specific training (Messerli, Bernbaum, 2004; FORP, 2011; Spear, 2011). In addition, specific training for teachers is needed in order to enable them to make up for any disadvantages - such as lack of built infrastructure, museums and galleries - with more interactive education outside the classroom, relying on the possibilities given in nature and agriculture (domestic animals and plants) as well as traditional crafts and skills that are not available for children in urban areas.

There are two suggested approaches to this: (1) to integrate specific training in the standard education program for teachers or (2) to organize specific training for those teachers who are particularly interested in work in mountain areas (isolated areas). Anyhow, combining those two approaches is beneficial: the first approach shows the specifics of teaching in alternative circumstances to students who can be motivated for further interest in the topic; and in the second approach gaining additional training would be equal to an upgrade of education, which can also motivate ambitious students, also ensuring that teachers start their work with freshly updated knowledge.

There are a whole range of measures which can make job opportunities for teachers attractive. Most of the measures are based on incentives that cannot be gained otherwise. The set is comprehensive, encountering all phases – before the engagement starts, during the

engagement and after. In the pre stage, the specific training discussed in the previous paragraphs is to be free of charge for attendees, accommodation and basic household equipment is also to be arranged at the state's expense instead of the teachers'; movement costs are to be subsidized. During the period of tuition, teachers can be given higher salaries and pension benefits; they can also be given a motor vehicle and computer to use. Those who keep their position longer than, for example, five years gain additional annual subsidies which rise with each following year or each five years. After their service in mountain areas, teachers should have guaranteed positions in a school of their own choice. All the stages are to be defined and secured by a contract which defines a minimum of two or three years of service (Arnalte, 2006; Queensland Government, 2008; Government of Western Australia, 2011).

Another option can be based on an example in France where children are given tuition by their parents at home, examined periodically at the nearest school. Anyhow, this solution can cause the unsocialised behaviour of children who are isolated solely by living in a remote area with few or no peers. In addition, physically isolated households are often poor households in Serbia which also means that children in such a family cannot have the appropriate equipment (from notebooks to computer) and parents can be busy with substantial agricultural activity – not having any time to devote to a child's education. Also, parents might lack education in recent discoveries themselves, which makes them inappropriate for the teaching role. Therefore, this possibility should be omitted in the case of Serbian mountain areas, but certainly considered in cases with no other option.

It is acceptable for children over eleven (beyond fourth grade) to travel if transport is available and there is no cost. However, due to the formerly addressed reasons, transportation is not practical in winter and it is costly as well. The alternative is boarding schools where pupils can get education, accommodation and proper nutrition in one place.

Besides the usual content, education is expected to give the pupils additional skills such as team work, cooperation with local communities and critical and integral thinking (Messerli, Bernbaum, 2004). Thematically, education in Serbian mountain areas should also correspond to the specifics of the area and to the knowledge that will improve economic diversification and endogenous development e.g. skills in tourism, small-scale industry and traditional crafts of the mountain communities, sustainable agriculture, carpentry, civil engineering, tailoring, bakery, traditional gastronomy, plumbing, the household economy, live-stock, etc. In addition, education programs should include courses for skills that will later enable work at a distance: web designing, programming, editing and translating.

As well as courses on common topics, interviews with local residents have shown the need for education on the sustainable use of space/land. Therefore, these topics should be included in the regular education program in order to enhance the capabilities of mountain populations to make decisions, participate and develop critical thinking.

Besides primary and secondary education, young people in mountain areas should have the opportunity to attend universities, too. Similar to secondary education, the subjects should be adjusted to current needs and topics, embracing meteorology, climatology, hydrology,

pedology (soil erosion protection), ecology, anthropology, communications, etc. (Kohler, Hurni, Wiesmann, Kläy, 2004). The aim is to provide scholars who can stay in mountain areas and contribute to their development, as well as scientists to be capable of communication with politicians (Messerli, Bernbaum, 2004). This should be followed by the creation of academic institutions in mountain areas, thus preventing brain drain and outflow of the highly qualified labour force. Education should not be a tool for leaving mountain areas, but in contrast, to strengthen their capacities. Some examples of where a higher education facility and (the needs of) mountain areas meet are the University of Highlands and Islands in Perth College – Scotland (Perth College UHI webpage, 2011) and the University of Central Asia – Kyrgyz Republic, Kazakhstan and Tajikistan aiming to promote “the social and economic development of Central Asia, particularly its mountain societies” (UCA webpage, 2011).

For raising the qualification structure of mountain populations and providing job opportunities for highly qualified individuals, research institutes can be established within different mountain areas. The network of a few institutes that already exist in Serbian mountain areas should be enriched by the establishment of institutes in each mountain area, to be diverse with regard to topics, but close in cooperation and exchange of results. For example, climate change is a current issue world-wide, but not yet thoroughly considered in Serbia. Since the topic relates to changes in mountain areas, it would be of considerable effect to establish an institute focused on this matter. Alongside the institute on climate change, there should be an institute for demographic change, too.

In order to improve employment and provide opportunities for constant improvement of qualifications, the formal educational sector should be enriched by various forms of informal education (Mountain Agenda, 2001; Wyg International – IMC Consulting, 2004). In Serbian mountain areas it plays an essential role in enabling those generations that completed their formal education a decade or more ago to adapt to the current situation, economic possibilities, participation, etc. In times of demographic, economic and climate changes, the population's capability of adaptation is crucial in overcoming problems and challenges. An additional reason for stressing the informal education sector is its faster adjustability and transformation in comparison to the formal education system.

In its early stage, buildings and staff for formal education can also be used as centres of informal education and/or advisory bodies. Joining several institutions under one roof additionally justifies the cost of refurbishing buildings and the maintenance of infrastructure. Networking and partnerships can be seen as particularly beneficial in the organisation of the informal sector. When in need of a qualification in tourism and small-scale industries and also skills in a private online business, the population in Serbian mountain areas can greatly benefit from specialised courses as well as from countries that teach skills currently needed on the labour market. Therefore, Serbian mountain municipalities and local NGOs should organise courses under the model existing in Scottish mountain areas, establishing permanent cooperation between entrepreneurs and the state employment agency.

In its initial phase, informal education can benefit from voluntary teachers and free courses to attract rather motivated mountain citizens. After this phase, the same citizens that took a free

course can give or assist free lectures themselves. Having a neighbour or somebody people are familiar with as a teacher should build trust and motivate suspicious individuals from a mountain community to participate and learn. This can also be the way to share experiences first hand – both successful and unsuccessful aspects.

In settlements with no primary or secondary schools, access to information and informal education should be organized via mobile services, with the responsibility to keep the isolated inhabitants informed independently of their decision to participate in the course or not. Due to the common relation between isolated communities and poverty, there is certainly the need for some courses and training to be organized voluntarily and with no charge. Therefore, the stakeholders and sectors involved are of utmost relevance.

Provision of the right to access information and education is not always profitable; therefore, a crucial role belongs to the national government and other public institutions in charge of those issues. This is particularly assigned to mountain areas because most of the facilities and organisation are not commercial due to the low population density. Besides the state budget, important stakeholders should be NGOs, prevalingly due to their basis of voluntary engagement and donations. Priority tasks are to endow infrastructure and teachers, starting from compulsory education and continuing with each further provision of knowledge and skills. The role of NGOs is in the provision of volunteers and additional sources of finance (Brewer Lama, Sattar, 2004; Maulia, 2008; FORP, 2011). The example of Swiss NGOs indicates that they can be engaged in a much wider range of activities such as surveys, consultations and the establishment of specialized magazines (Castelein et al., 2006).

The inclusion of various stakeholders is the base for decisions that cover various interests and outcomes which involve compromise rather than a one-sided decision-making process. Therefore, success in the organisation of education partially depends on the individuals involved. An example: after the local community establishes its vision towards agricultural development, the school develops a range of courses that contribute knowledge and skills in this direction, involving farmers in the organisation of education. Farmers concede their land and farm facilities for students to practise, at the same benefiting from their assistance and advice. Thus benefits are mutual for the local community, farmers and students.

Additionally, the organisation of educational programs can benefit from networking among the same/similar groups of individuals from different communities and the involvement of international bodies dealing with these topics. The exchange of experience between teachers corresponds to the learning process with various types of input and ideas important in the bottom-up approach (Rural Education webpage, 2005), while the engagement of international organisations such as UNESCO's International Institute for Educational Planning can contribute the organisation in the top-down approach (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2009).

Finally, the overall aim of education in mountain areas should not be to provide opportunities for outside of mountain areas but to increase opportunities for the development of mountain areas themselves. Therefore, the courses and subjects at schools and universities should reflect

the need for the diversification of economic activities and stimulate a commercial approach to traditional products. Modernisation in terms of ICT technologies greatly improves the possibilities for education and business in remote areas, lowering the costs of travelling as well. Besides formal education, informal education can play an important role in activating the population that has already finished formal education and provide knowledge in activities which were not developed in the Serbian mountain areas until recently.

6.3 Transformation of Opportunities - Diversification of Economic Activities and Improved Attractiveness of Mountain Products

One of the crucial and inevitable reasons to retain the population in Serbian mountain areas, both villages and towns, is to improve their economic opportunities. Most incomes are realized by employees in public services, while in agriculture and tourism they are insignificant. Public sector work-places are anyway concentrated in municipal centres, only in some cases having representatives in a few local communities (*mesne zajednice*). Simultaneously, agriculture is the dominant activity in the villages, but mostly self-sufficient (small-scale) agriculture, being a source of food for a family, non-commercial and insignificant for the economy. Most state-run industries did not resist the privatisation and restructuring changes they underwent, either in municipal centres or in villages.

Nevertheless, it is not expected that reconstruction of the public sector alone can be sufficient to improve economic opportunities, but also strengthening of other activities e.g. the decayed industrial sector and additional diversification of activities. However, the development of various activities does not mean negligence towards agriculture. In contrast, traditional forms of agriculture are supported by the Berchtesgaden Declaration (2008), other international documents – the Alpine (1991) and Carpathian Convention (2003), ESDP (1999), Guiding Principles (2000), Territorial Agenda (2007) – and practices in e.g. Switzerland and Austria. Endogenous development is advocated as a development rising from traditional knowledge. Indirectly, the concept is already supported in some Serbian documents e.g. the Law on Natural Protection declares the preservation of traditional diversity, meaning both economic activities and architecture; the Rural Development Strategy (2009) supports preservation of traditional breeds; and finally the Spatial Development Strategy (2009) and Spatial Plan (2010) advocate development of traditional agriculture and renewal of grazing activity particularly in mountain areas. Besides the recommendations, successful practices in Alpine countries indicate that Serbian mountain areas should set similar measures and implement them in their own context.

In order to improve the existence of traditional agricultural products, the rural economy needs to be commercialised and more competitive. Among other possibilities, marketing strategies represent a tool for this. The focus can be on supporting agricultural gross production or relating it with other activities such as tourism and small industries. As traditional patterns of production were significantly grounded in a sustainable approach and strongly dependent on the population and local resources, the second option appears more recommendable for development of mountain economy in order to contribute to other functions of Serbian mountain areas: environmental, landscape value, biodiversity and diversification of the economy. Another argument to omit gross production is that it demands a large amount of land

and use of resources, which tends not to be sustainable and can only be a “solution” for an insignificant number of mountain citizens. Therefore, competitiveness of mountain agricultural products should be improved by clarifying procedures and lowering costs for the provision of a label as to the geographic origin and branding of products, also the knowledge and technical support for the promotion of products with added value instead of raw products (e.g. production of cheese instead of milk, sweaters instead of wool, jam instead of fruits) and, according to interviews with the local population and Amity NGO, national products need to have an advantage over imported brands.

Live-stocking is also characteristic and traditional for mountain areas in Serbia. Traditional herds in the past were significantly larger than nowadays (e.g. between 50 and 80 sheep compared with 0-10 today), which indicates the potential capacities for sustainable live-stocking in the future. Relevant stimulation from the side of the government should also be focused on grouping farmers and on their cooperation and networking which have shown positive results in other European mountain areas, but are still not common in Serbia. Farmers and even local governments tend to comprehend each other as competition, not partnership parties, which should be changed. Lastly, competitiveness and the success of mountain agricultural production depend on the introduction of innovations and modern technologies that need to be subsidised alongside traditional tools and patterns of production.

With regard to live-stocking and enhancement of competitiveness, farmers in Serbian mountain areas should be encouraged and financially supported to grow and produce organic products. Yearly subsidies in terms of free seeds for planting and free cattle for the starting of business should be efficient incentives for this form of production. Besides, the Spatial Plan (2010) and National Rural Development Programme (2010) favoured organic production, collection of wild berries, collection of herbs and berry fruit growing. With this in mind, the local government and population interviewed point out the same motives, although each favours some of the listed orientations in production. This indicates that generalisation is to be avoided at least to the level of a municipality.

Allowances, credits and other variations of state support for agricultural production are often universal for all areas – lowlands, hilly and mountain areas in Serbia. On the other hand, programs that used to support live-stocking one year and fruit production the next year were not equally beneficial for mountain areas due to their geographic characteristics. Namely, crop farming in mountain areas has never been as appropriate as fruit growing, potato growing, viniculture or live-stocking. In addition, systematic support is of utmost relevance for supporting the whole process from the first investment to promotion in the market.

Small (family) industries are among sustainable forms of production and use of natural resources in mountain areas, therefore, they should be also supported by allowances. The production needs to be based on local resources and in addition to be related to traditional products: spices, herbs, dried fruit, dried mushrooms, spirit drinks, honey, woollen clothing, etc.

Agricultural cooperatives used to be common in Serbian rural areas, they were state owned, but with privatisation they stopped working. According to interviews with local government officials and mountain inhabitants, mountain farmers have not managed to adapt to the absence of the cooperatives. Before agricultural products gain market competitiveness and farmers adopt contemporary knowledge and experience how to promote and sell their products, some form of mediation between them and the market should be provided. One of the solutions might be cooperation between farmers at a local and regional level, but it appears that the state government should take a role in pushing the process forwards and possibly assign/stimulate NGOs to participate as the mediators and coaches.

Besides the tendency for excessive use of resources, the absence of a work force (young work-force) is another limitation for commercial (great-scale) agricultural production in Serbian mountain areas. However, as far as gross production does not irreversibly impact the environment, the state should develop some supportive measures. In that case, a supportive system with consistent programming and precise agricultural land zoning such as in Austria should be the model to follow. In addition, the Serbian government should systematically support the following relations: elderly households and households that are not interested in large-scale agriculture rent agricultural land to stakeholders who are interested in commercial agricultural production. In this model, the state would be in charge of subsidising the rental process, thus motivating bigger producers to invest, at the same time providing financial support to elderly households which are often covered with no other source of income. Ownership of land, even if it is not actively used, will be more beneficial than currently, and further conversion to abandoned land will be stopped or at least slowed down. However, local or regional stakeholders should have an advantage over renters from other regions.

Besides agriculture, diversification means that households should be given a chance for employment in other fields, too. According to the experience of Alpine countries and the strategic orientation of the Serbian government (the Spatial Development Strategy (2009), Tourism Development Strategy (2005), Spatial Plan of the Republic of Serbia (2010)), tourism is to play a primary role, first of all for being compatible with agricultural activities in all its variations: as agro-tourism, eco-tourism and small-capacity tourism. Secondly, forms of soft-tourism also fulfil the expectations of commercial activity while preserving cultural (traditional agriculture) and natural (environment oriented tourism) heritage.

Therefore, tourism takes a specific place in the diversification of a mountain economy, alongside forestry, mining, hunting and small-scale (family) industry. Since it is a relatively new activity in most Serbian mountain villages, there is a whole range of knowledge and practice to learn about it in order to adopt it successfully. Basically, the most developed European mountain areas – the Alps – have developed due to tourism. Tourism in the Alps was developed before the concept of sustainability was stressed in practice; therefore the difference in developing mountain massifs, such as the Romanian Carpathians, is that diversification initiatives reflect sustainability from the very beginning. For this reason the Romanian government stimulates tourism on a smaller scale, a model that should be taken up in Serbian mountain areas.

In Serbia there are five larger ski-resorts (Kopaonik, Zlatibor, Divčibare, Stara Planina and Goč) and some smaller ones with smaller accommodation capacities and basic ski-lifts. The Kopaonik resort is in the Kopaonik National Park and it is noted that visitor demand in the winter season reaches beyond its capacity. This harms the National Park, especially because private investors are motivated by profit rather than taking care of the environmental impact. Besides Kopaonik, a high demand is recorded in Zlatibor, but the resort is not as specialised in its ski offer as the former one. Anyhow, the other three resorts are still not popularised and in order to follow a sustainable concept, the focus in tourism development in Serbia should be on the improvement of the winter offer of the existing resorts rather than development of other locations. In addition, a vital measure is the empowerment of the local population and having the capital to be involved in small-capacity tourism. This way, profit goes to whole families who live in mountain areas and at the same time traditional patterns have a chance to remain. Engagement of the state in this regard would have to be strong, particularly in the first phase where the population has to be informed about key issues in sustainable tourism development.

Referring back to employment opportunities only in the public sector, an increase in capacity is to be expected. Namely, even though reorganisation towards a more decentralised system is needed, as well as improvement of services such as dissemination of information, it cannot be expected that a significantly larger work-force will be needed. The system of public institutions in current times does not require a more dense network of local public institutions compared with the network that was developed in the couple of decades after 1945 (the local government is organised at a municipal level with branches of representatives of groups of villages). However, there are two possibilities for improving job opportunities in the peripheral areas of Serbia. One is the establishment of regions which are assigned certain responsibilities requiring engagement of the work-force. This is also an opportunity to engage highly skilled workers and keep them in each region. The other possibility also relates to highly skilled workers who currently have limited chances of employment in peripheral areas, if at all.

Namely, besides middle and higher education, academic institutions grounded in relevant issues for mountain areas are lacking. Research institutions specialised in different branches of agriculture and live-stocking (e.g. Čačak Fruit Research Institute; Kruševac Institute for Forage Crops; Kraljevo Veterinary Specialised Institute) or mining (e.g. Bor Institute for Mining and Metallurgy) are decentralised from Belgrade and from that aspect represent positive examples. On the other hand, there are still many municipal centres in Serbian mountain areas lacking research institutions, particularly with regard to activities in mountain areas. A measure in this case would be the establishment of branches of the existing institutes in the cities and towns where the topic of a “mother” institute is relevant for the area, specifically focusing on the different treatment needed in isolated, steep-sloped and depopulated areas on the one hand and more accessible areas on the other hand. An alternative to this measure is the establishment of mountain focused research institutes in each mountain area of Serbia (or at the regional level of future regions) which are to be efficiently networking among themselves and inevitably with the other institutes listed above, as well as with a range of other institutes located in Belgrade. By adaptation and renovation of existing buildings, a location for the

institutes can be provided. Similar to motivation measures for teachers, scientific staff can be attracted to mountain areas, thus improving the knowledge capacity directly applicable at the location and mitigating brain drain primarily from the region and secondly from the country.

6.4 Summary

The use and socio-economic development of Serbian mountain areas can be enhanced primarily by addressing three fields of actions. The first is the field of management where it is expected that the local population is devolved the right and opportunity to actively participate in decision-making, where different stakeholders at multiple levels (national, regional and local) and in different sectors (public, civil and private) responsibly divide tasks including all the stages – from research, over decision-making, implementation, monitoring, to evaluation and back to research and where specific advantages and difficulties of the mountain massifs are recognised in the form of special status. The second field of action is infrastructure aimed at improving physical accessibility and accessibility to education, knowledge and information, which are preconditions for the development of economic opportunities. Among other aspects, enhancement of the infrastructural field opens the way towards economic diversification (particularly by complementary activities) and enables attractiveness of economic products and jobs by information-communication technologies which enable dissemination of knowledge, product marketing and accessibility to the market.

With particular regard to urban-rural discrepancies, strengthening urban-rural interdependencies is taken as an option for raising up the role of rural areas and, together with active participation of the local population, is a way of building local economies based on local resources and local needs. Besides this, activation of the civil sector and volunteers appears to be adequate in the starting development phase until certain measures, staff and financial resources are mobilised.

After all, it can be noted that the enhancement of Serbian mountain area development greatly depends on the actions the Serbian national government is willing to take in the first phase, and then the responsibility should be shared with the local governments and local population in the following phase. Therefore, the national level is where the responses should be activated from, later on devolved to the local, regional and international levels. Moreover, it should be taken into consideration that the instruments applied are explicitly and clearly addressing mountain areas and that they cover different time-horizons – from short-term, over mid-term to long-term planning.

7 DEVELOPMENT PERSPECTIVES FOR SERBIAN MOUNTAIN AREAS

The search for development perspectives for Serbian mountain areas that would awake the sleeping heritage has been led through several steps. The first step was analysis of literature and conducted interviews that served to explore problems and set their categories for Serbian mountain areas, then to describe them and reach the point where it was possible to conclude that Serbian mountain areas are more similar to other European mountain areas in matters of environmental and demographic problems, while being more different with regard to their economic development, accessibility, infrastructure and management.

The identified categories of problems were used in the second step of the research, where the goal was to explore how Serbia addresses problems in its mountain areas and to find what there is to be learnt from the experience of other European mountain areas. The obtained results were structured by categories of problems. The responses to problems of mountain areas were looked at in eight European countries other than Serbia. The choice of the countries was limited by the available literature, however, the goal to involve both mountain areas with a lesser extent of problems (the Alpine Massif - Austria, Germany, France, Italy and Switzerland) and mountain areas most similar to Serbian mountain areas (the Balkan Mountain Massif – Bulgaria and Carpathian Mountain Massif - Romania and Ukraine) was achieved. Again, interviews were used as an additional source of data in the case of Serbian mountain areas. Finally, the results of this research phase confirmed the hypothesis that, with certain differences, European countries have more experience in addressing problems in their mountain areas than Serbia that has just recently started and is still having problems applying the measures already been declared.

In the third step the task was to consider how the use and development of Serbian mountain areas can be enhanced by activating natural and cultural heritage in an ecologically non-destructive manner. The results gained in the first and second step of the research, together with data obtained in interviews, were used as analytical material for considering how to awaken the sleeping heritage. Namely, by exploring relations between responses and the previously stated problems and additionally evaluating relevance of the responses by the number of relations to the problems, it was concluded that the most significant actions are in the group of management problems, followed by actions in accessibility, infrastructure and the economy. On the other hand, the analysis indicated that environmental and demographic problems are not omitted either, but they were tackled indirectly, by the enhancement of management, accessibility, infrastructure and the economy. Therefore, the research in the third step was focused on the most influential fields of responses – management, accessibility, infrastructure and the economy, by explaining the role of the instruments and measures presented in the second step, but explicitly applying it to the case of Serbian mountain areas. The explanation also embraced analysis of instruments and measures existing in Serbia, showing the options for their improvement.

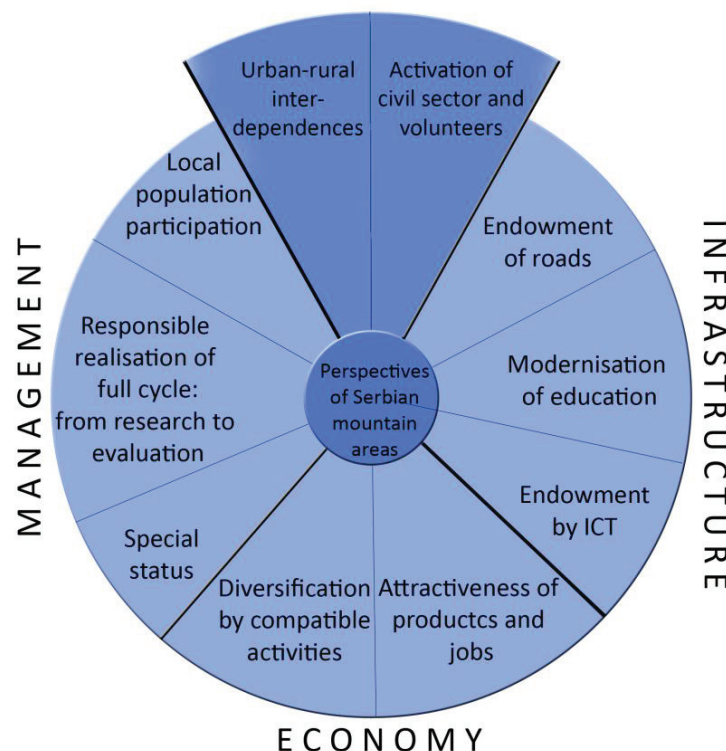
Finally, based on the results achieved in the third step, this chapter will consider the development perspectives of Serbian mountain areas in the fields of management,

infrastructure (including accessibility) and the economy, thus giving the final empirical results of this research. Through this, the section will give an answer to the main research question. The following sections consider possible implications of the research and present the final conclusion.

7.1 Final Empirical Results

The aim of this section is to present the final empirical results of this research putting together results from the previous research questions. Thus, the development perspectives are finally discussed and the main research question – what are the development perspectives for Serbian mountain areas? – receives its answer. As shown in Graph 7-1, and according to the considerations shown in the previous chapter, the development perspectives for Serbian mountain areas are major changes in the management and governing of mountain areas, an increase in the significance of infrastructure standards and modernisation of the approach in the economic sphere. They represent the three main fields of action – management, infrastructure and economics – but there are also a couple of actions valuable for all the fields simultaneously – urban-rural interdependences and activation of the civil sector and volunteers.

Graph 7-1: Development Perspectives of Serbian Mountain Areas



Source: elaborated by the author

The fields of management, infrastructure and the economy were recognised as the most significant with regard to the variety of problems they address in the European mountain

countries analysed. In the field of management there are three perspectives of particular significance: active local population participation, responsible realisation of the full cycle of decision making - from research to evaluation – and the special status for Serbian mountain areas. The development perspectives in the field of accessibility and infrastructure are the endowment of roads, modernisation of education and ICT endowment. With regard to the economic field, suggested development perspectives are the diversification of compatible and complementary activities and attractiveness of products and jobs. Next to those specified fields, urban-rural interdependences and activation of volunteers are added as specific perspectives that can be relevant for each of the previously listed fields and on the other hand that appear to be inevitable for the future development of Serbian mountain areas. The following subsections go through the fields and perspectives, thus completing the core body of the dissertation.

7.1.1 Development Perspectives in the Field of Management

7.1.1.1 Active Local Population Participation

Considering a centralized model of Serbia, independence of the local population in Serbian mountain areas with regard to decision-making practically does not exist. Thus, active participation of the local population in the creation of community visions, strategies and measures is disabled. Judging by the positive experiences of active involvement of the local population in other European mountain areas where decision-making on development goals and measures is a regular responsibility of the local communities, it can be concluded that bringing this change into the management of Serbian mountain areas would result in their positive development. Besides, it can be expected that dependence on external factors in local mountain communities would be diminished by devolvement of the right to decision-making, thus motivating them not to choose an option to emigrate.

The centralized government model also limits local government financially and in decision-making. Since such a situation has existed for a long time, transition to a new system might be gradual. Firstly the municipalities would gain financial and decision-making independence, and secondly it would be the turn of the local population to gain the right to decide on the future of their communities. This might fulfil the principles of subsidiarity, the bottom-up approach and endogenous development, which are generally accepted and applied in other European mountain areas and in Serbia only declared, but have still not yet been implemented.

7.1.1.2 Responsible Realisation of the Full Management Cycle - from Research to Evaluation

The successful examples have shown the significance of completing the process of mountain area management. What makes the process complete is the execution of each step in the circle, starting from the research looking for the facts, then decision-making based on the facts, followed by implementation of the decisions, monitoring of implementation and the evaluation of the monitored results that takes the process back to the research. In the case of Serbian mountain areas, the circle has not been closed – monitoring and evaluation are excluded. Due to this situation, action taken in the development of mountain areas has a high possibility of failure, as has already been seen in the case of spatial plans whose implementation, monitoring

and evaluation were forgotten after their adoption. In order to overcome the problem, it is necessary to invest certain efforts and resources to complete all the steps in the management process circle.

The other steps in the process are not satisfactorily strong either. Namely, they have been recently developed and still take the form of sporadic events, particularly due to the non-systematised and implicit approach to Serbian mountain areas.

The task is not finished even with execution of the steps in the circle. That is because their success does not depend on their individual or partially linked realisation, but on their mutual dependence and reliance. Besides, it is relevant to split the steps between institutions, so that an institution is not in charge of e.g. both implementation and monitoring. Therefore, the parallel need for the linking of steps/tasks and institutional independence and integrity over the task confirms the significance of institutional cooperation and networking for the completion of the process.

7.1.1.3 Special Status of Serbian Mountain Areas

With regard to the geographic and spatial aspects, differences are firstly marked between urban and rural areas, but what is stressed by European spatial development documents – Guiding Principles for Sustainable Spatial Development of the European Continent (CEMAT, 2000), Cohesion Policy (2005) and Territorial Agenda (2007) – is that geographically specific areas need particular attention and responses adapted to their features, including mountain areas.

More than half of the Serbian territory comprises mountain areas and almost one third is covered by mountains; however, documents and responses adapted specifically for them are lacking. They are part of sporadic practice, often taken in the context of other topics and rarely explicitly tackled in development documents. At a time when the Serbian government has no clear objective and vision with regard to the development of its mountain areas, when institutions act separately and precise measures are missing, declaring special status for Serbian mountain areas can help the process towards successful and well defined mountain policy.

The special status of mountain areas, such as in Austria and Switzerland, has also provided the successful application of precise measures that have been practised already for decades. In addition, delimitation of the regions according to the sprawl of mountain massifs might correspond to the regional bodies that already exist or are in formation being responsible for the planning and implementation of national, regional strategies as well as international conventions such as the Alpine and Carpathian convention.

7.1.2 Development Perspectives for Serbian Mountain Areas in the Field of Infrastructure

7.1.2.1 Endowment of Roads

Generally speaking, the road infrastructure in Serbia is not in good condition, but this is particularly impaired in rural areas. In contrast to this, a road is the first improvement the local populations of Serbian mountain areas want to have. The relevance of road infrastructure is

additionally emphasised by the fact that European mountain areas dealing with fewer problems are the areas where the problem of road infrastructure is eliminated. Both aspects indicate that endowment of roads is an inevitable action in the development of Serbian mountain areas.

If there were financial resources to cover all Serbian mountain settlements with a road network, in a great number of cases - in the villages with a small aged population remaining and with severe lack of other infrastructure - that would be dissipation of resources. Therefore, the road infrastructure requires planning of priorities that comply with strategic decisions of the state, local government and most of all with the initiatives of the local population. The settlements not eligible for modernisation of road infrastructure by those criteria should be given an alternative such as transportation by terrain vehicles capable of driving on the bad quality roads.

7.1.2.2 Modernisation of Education

The development perspectives for the mountain municipalities would be diminished if action in the field of education in mountain villages was not taken. The current situation does not even allowed primary school to be attended by every child. Namely, there are cases where a child, in order to attend school, needs to walk or travel a long distance, which sometimes results in the whole family moving from the village to a town/city. Attending a university often leads to emigration outside the municipality or even region. Those are emigrants that rarely come back.

In order to enhance the development perspective for Serbian mountain areas, modernisation of education programs and equipment should be in place. With regard to education programs, they should be adapted to the topic of mountain areas, their functions, specifics, opportunities and problems as well as to involve field work (outside the classroom), especially because such small classes are easier to organize with regard to outside activities. Modernizing equipment concerns the introduction of computers and availability of online resources and of course other sets of specific innovations that are to be mastered. The introduction of mountain specific topics is particularly expected at the universities where whole courses can be devoted to some of the aspects of mountain areas. Teaching mountain specific courses at universities, e.g. in agriculture, ecology, environmental management, etc., also increases the chances that young people will return or emigrate to mountain areas.

The modernisation of education in Serbian mountain areas also refers to the introduction of informal education. This would be of particular importance for those who have finished a formal education, but are still capable of learning, accepting innovations and taking action. The particular relevance of this aspect is to ease the adaptation, acceptance and learning of an active role in changes such as economic diversification or participation in local initiatives.

7.1.2.3 Endowment of ICT

Conditions for ICT use in rural Serbian mountain areas are almost completely absent. In some cases even towns and institutions of local authorities do not have computer equipment or an internet connection. The introduction of regular cooperation between institutions, fast and

efficient communication with the population, exchange of information and placing information where it can be available to anyone require the endowment of ICT.

ICT also plays a significant role in modernizing education, particularly in university education. Namely, in some countries distance learning and use of online programs are standardised services of universities, through which higher education opportunities can be provided for youth in Serbian mountain areas, too.

The additional benefit of ICT is in business. In the isolated mountain areas of some economically stronger European mountain areas the computer and the Internet are used for marketing and selling products. In circumstances where the economy of Serbian mountain areas suffers from incompetence and producers have trouble reaching the market, the introduction of ICT can promote certain products to a much broader audience (potential buyers), thus improving competence even outside of the local market.

7.1.3 Development Perspectives for Serbian Mountain Areas in the Field of Economics

7.1.3.1 Diversification by Compatible and Complementary Activities

In most Serbian mountain settlements agriculture is not commercial and is often the only activity, thus being subsistent and not representing a source of income. In order to increase income and at the same time keep the natural value of mountains, some European mountain countries have introduced tourism and small industries as compatible and also complementary activities.

Diversification by compatible activities refers to the introduction and support of activities complying with mountain (local) resources in terms of it being based on them (such as traditional activities), but also not harming them irreversibly. The other aspect – complementary - refers to the economic activities that can be combined one with another, such as the case with agricultural production being a part of tourism and agricultural products being raw material for small-scale industrial production.

7.1.3.2 Attractiveness of Products and Jobs

The emigration from Serbian mountain areas is partially caused by difficulties in agricultural production and unattractiveness of the products. Economically developed mountain communities do recognize the importance of traditional products and they have also modernized the production process, which is a rarity in Serbian mountain villages. Anyhow, the value of a product can rise exactly because it is produced traditionally, but this requires branding– the process of creating a unique name and image for a product that guarantees its quality. The process also includes marketing and advertising campaigns where placement on the Internet helps.

The attractiveness of mountain products can be enhanced when it is combined with other activities such as tourism. However, all the steps in the process should be integrated by a strategy and subsidised by the state and local government. Finally, as a result it can be

expected that the attractiveness of products will rise, thus increasing the attractiveness of jobs and overall living in Serbian mountain areas.

7.1.4 General Fields of Development Perspectives for Serbian Mountain Areas

7.1.4.1 Urban-Rural Interdependence

Infrastructure and the economic and social relations between municipal and regional centres and rural Serbian mountain areas are weak. Most development is focused in the municipal centres where the population is concentrated the most. At the same time, inhabitants of the villages act practically independently with the limited infrastructure and services they are provided with. The farmers cannot find a market for their products, while the inhabitants of the towns consume products from other regions or imported from other countries. If there is any dependence between towns and villages then it is dependence of rural inhabitants on the services and often jobs provided only in urban zones. Under these circumstances, the rural economy and villages are decaying, while the inhabitants emigrate.

In order to overcome the situation, the competitive attitude between towns and villages in Serbian mountain areas should be exchanged with their cooperation in the field of economics, but also education, culture and social services. The development perspective for the whole region should be founded on the common interest of both the urban and rural population and involve active participation of the local population in the process. Besides the already existing dependence of rural areas on urban ones, dependence in the opposite direction should be strengthened, too. Food cannot be produced in towns, and conditions for recreation and relaxing are more convenient in the natural environment; therefore, a village can always secure a market for its products and recreation/tourism areas for its inhabitants, which makes the activities less costly because resources and services are nearby. This cooperation and balanced spatial development are expected to increase the strength of the whole region.

7.1.4.2 Activation of Civil Sector and Volunteers

So far, there has been no mountain area specific NGO in Serbia, while the public sector dominates over existing instruments dealing with Serbian mountain areas. However, the needs of the mountain population are diverse, from support in education to support for the elderly. In addition, examples from Switzerland show how diverse and irreplaceable a role an NGO can have in the management and development of mountain areas.

Therefore, if mountain specific NGOs are not established, the Serbian government should support the activities of existing NGOs that can contribute to the development of Serbian mountain areas and help the mountain population, as well as encourage the establishment of local NGOs. The decentralisation and networking of such organisations would be significantly supportive to the inhabitants of the mountain areas until the government manages formal decentralisation. The other reasons to support NGOs are that alternative ways to finance activities in mountain areas can speed up any action taken until the government considers the budget on this issue and that NGOs can take the role of a mediator between inhabitants and the government before active population participation is officially enabled. The role of NGOs

will not finish with decentralisation of the state, the establishment of a budget and provision of rights to actively participate decision-making. In contrast, NGOs in Switzerland have already been working for decades, which indicates that they can keep on working actively in the case of Serbian mountain areas, too.

In order to accelerate action in Serbian mountain areas, besides the NGOs, it is expected that volunteers can contribute significantly. There are examples of when volunteers have taken responsibility over transportation of medicines and other goods to isolated households. This kind of help as well as medical and social care for the elderly population are especially needed, although volunteers can take an even wider variety of different roles e.g. for the education on ICT and use of the Internet, for arranging the local landfills, etc.

7.2 Implications of the Results

7.2.1 *Scientific Research*

This research, although led through various examples of practices, can contribute by its results to the field of science and theory, starting with a discussion on the necessity for the precise definition and delineation of mountain areas. Thus, the example of Serbian mountain areas and governance over them as a whole or only their parts has also confirmed the relevance of flexibility in setting delineation of mountains and mountain areas. Recommendations from the practice of Alpine countries have been proven in the case of Serbian mountain areas, stressing the importance of adjusting criteria for each mountain area every time the main goals and aims of action change. On the other hand, the fixed criteria that would make one mountain area and its administrative units comparable to other mountain areas need to be simultaneously obeyed.

The analysis has also brought out the principles that frame the sustainable development concept, setting them consequently and comprehensively. In addition, the approach of territorial cohesion and that of the tendency towards equal use of resources over a territory have been recognized by following both groups of arguments – arguments for use and preservation of resources. In many ways, a balance has been indicated between the necessity to use resources and the necessity to limit the exhaustion of the resources.

The systematic classification of problems existing over European mountain areas and recognition of their relationships presented in this work helps to understand which factors play a causal role and which appear rather as a consequence. Further, the analysis shows that the relations are universally spread out over the European mountain areas, which can be used in understanding problems and in the process of finding solutions in future research.

The research showed that not only should mountains be treated differently from lowlands, but also that rural areas show particularities when compared to urban areas. The difference deserves particular focus due to the specificity of rural areas over urban cores, basically recognized in a noticeable lagging with regard to the socio-economic and infrastructural sphere, accompanied by a weaker position in decision-making.

Last but not least, field work and thereby data collected allowed the intersection of different levels and types of stakeholders: national and local governance and experts, NGOs and the local

population. This obtained support for data already contained in related literature and analysed in statistics, which help to estimate the specific circumstances in Serbian mountain areas and finally interpret them for more accurate application.

7.2.2 Political Advisory and Spatial Planning

Based on the results of this research two main fields of implications can be extracted: the first is in the field of political advice and the second in the field of spatial planning (at least as defined in Serbia). Further, the implications in the field of political advice embrace recommendations on the general changes which also have an impact on the development perspectives for Serbian mountain areas, implications which are relevant explicitly in the case of Serbian mountain areas. The implications with regard to general actions are:

- Decentralisation in terms of decision-making and finance and
- Enhancement of management transparency.

In addition, the results showed that the management of Serbian mountain areas often finishes with weakly defined principles and goals in the context of environmental protection, development of tourism or agricultural production. Primarily, the principles and goals need to be strengthened in terms of clear focus on mountain areas and secondly, the principles should be followed by precise measures. For this it is necessary to define a development vision that would lead to further action. Besides having an explicit focus, Serbian mountain areas require precision and clarity of the measures declared. Namely, the extent of problems based on objective conditions and circumstances is different between rural and urban mountain areas, but also significant differences for agricultural production can be noticed at the level of a parcel. Therefore, the implications with particular regard to Serbian mountain areas are:

- Setting the vision,
- Strengthening of principles and goals,
- Precise and focused measures and
- Problem-graduated measures.

The role of the spatial planning field is weakened in that planning documents are usually a matter of formality and they have not been applied in spite of being an obligatory legal act. The research also indicated that the idea and role of spatial planning and spatial plans are not familiar to the population. Therefore, in order to strengthen the role of the field of spatial planning and to be able to benefit from it, the following aspects should be considered:

- Fulfilment of the role of spatial planning,
- Dissemination of information about the role and significance of spatial planning.

7.3 Final Considerations

Serbian mountain areas are characterised by high natural value, biodiversity and specific traditional patterns of visual and practical culture that are jeopardized by negligence and a generalised approach. In addition, this heritage is affected by demographic change and

threatened with extinction. The diversity of flora and fauna, ore and fresh water reservoirs, traditional architecture, materials and customs are in some cases taken to the limit by uncontrolled use, while in most cases, the value of the heritage and its maintenance are actually forgotten.

Analysis of the situation in Serbia and other European mountain areas has shown that Serbia has just started with explicit treatment of the problems in its mountain areas. As well as that, there are more diverse responses to them than are considered and applied with this regard. With sometimes smaller and elsewhere greater differences, all European mountain areas face problems, but to a different extent – depending on the complexity and continuity of the responses on the problems.

So, there must be perspectives for the treatment and empowerment of Serbian mountain areas. Before the natural and cultural heritage are lost and irreversibly impaired, there is a way towards a vision of mountain areas where: the elderly population has health-care provided and they are included in the process of traditional knowledge and skills transmission; the young population is motivated to live there thanks to lower living-costs than in lowland areas, a higher environmental quality and contemporary offers of jobs; the community takes care of wild and agro biodiversity and aesthetic values of the landscape; and where systematic, coordinated rules will control use of the resources, while aiming at their improvement, too.

According to this research, the development perspectives for Serbian mountain areas should focus on the field of general and mountain area specific management, road accessibility, education and access to information, infrastructure and a diversified attractive economy. The strengthening of urban-rural interdependencies and activation of NGOs and volunteers can be added as general fields of action.

Regarding the number of mountain area settlements, their volume of problems and volume of necessary improvements, the current organisational and financial capacity of the Republic of Serbia could be easily overloaded. Therefore, the process of selecting settlements for investments, planners and decision-makers should support by considering demographic structures and the relevance of natural and cultural heritage (that are to be preserved), but also inevitably consulting the local community who should be motivated to think of their own vision and be given the opportunity to express it. Both the mitigation and adaptation approaches are recommended: the former approach in the case of settlements that still have demographic-reproductive capacity and the latter approach for the settlements of elderly residents.

The set of instruments discussed in this dissertation (legislation, institutionalisation, financial management, strategic and spatial planning and active participation of the local population) should be combined so that together they cover all time-horizons (short-, mid- and long-term) and different territorial levels (national, local, then international and if possible regional).

In general, the area of economics in Serbian mountain areas needs to be strengthened by knowledge (education), so it can be responsibly and creatively used in the execution of power in the decision-making local mountain authorities and residents are going to be given (management), which, again, requires contemporary equipment such as computers and the

Internet, etc. (infrastructure). Also, according to some examples, something which at first sight is a disadvantage can be turned into an advantage, as in the case of devastated forests in a Bavarian nature park used for learning about natural forest recovery. In this regard, no one can claim that an idea and humble organisation would not turn deserted villages connected in a network into a point of interest for hikers, nature-lovers and those interested in the history and culture of the region.

Therefore, in spite of the range of problems and challenges Serbian mountain areas face, other examples show that there is significant space to build up the existing responses and mitigate the difficulties, saving natural, cultural heritage and mountain communities. Although financial circumstances might limit the application of all possibilities at once, a clear vision and mountain area policy can help in leading the process through the set of priorities. By being consistent and not avoiding a prior general reconstruction of the governing system, Serbian mountain areas will be given a chance to awake their sleeping heritage.

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