



Sustainable Agriculture
and Rural Development
MOUNTAIN POLICY PROJECT



Policy Consultation on Sustainable Agriculture and Rural Development In the Carpathians

Policy Assessments for Sustainable Agriculture and Rural Development in Mountain Regions (SARD-M)

National Reports in Romania, Slovakia and Ukraine

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Executive summary

This report is a result and product of the "Policy Consultation on Sustainable Agriculture and Rural Development in the Carpathians" in support of the assessments of strengths and weaknesses of the mountain policies in the Carpathians implemented in 2005 in the framework of the FAO Project for Sustainable Agriculture and Rural Development in Mountain Regions (SARD-M) which aims to strengthen mountain populations' livelihoods with improved policies for sustainable agriculture and rural development.

Activities under the project in the Carpathians have involved many different partners (i.e. governmental bodies, civil society and international organizations) and their results have been discussed at a regional expert's workshop.

During the months of June to August 2005, three national consultants Emilian Burdusel from Romania, Radoslava Kanianska from Slovakia, Oksana Maryshevych from Ukraine, carried out three country surveys in Romania, an EU accession country, Slovakia, a new EU Member State, and Ukraine, an EU neighbouring country.

Through the analysis of the strengths and weaknesses of SARD-M related policies, institutions and processes, the objective was to identify priority areas for sub-regional and regional policies and options that need to be addressed from an economic, environmental and social perspective. Based on the findings obtained from the three policy assessments conducted at the national level, recommendations and proposals for follow-up activities were drawn up for the Carpathian level.

The three draft assessments were discussed during an expert workshop on Strengthening SARD-M policies for the protection and sustainable development of the Carpathians, organized by the United Nations Environment Programme Vienna – Interim Secretariat of the Carpathian Convention (UNEP Vienna – ISCC), together with the FAO SARD-M Project and EUROMONTANA in conjunction with the Conference on "Integrated Rural Development in the Mountain Areas of Central and Eastern Europe and the Balkans", held on 24 October 2005 in Liptovský Mikuláš, Slovak Republic. This workshop drew high-level participation from the Minister of Agriculture of the Slovak Republic and Ministries from other Central and Eastern European countries, experts from different branches and from civil society along with representatives from international organizations. The participants revised the assessment results and enriched the outcomes of the consultation through valuable comments and by elaborating 22 recommendations and proposals for follow-up activities which are published in a separate document.¹

It is important to underline that despite the importance of SARD-M as a policy domain in the Carpathians, such a comprehensive study in the context of the SARD-M approach for the Carpathian region has not been undertaken before in any of the seven countries.

In order to conduct these rapid assessments, national consultants individually gathered general information on specific aspects of agriculture and rural development in the mountain regions and attempted to evaluate the effects of EU accession and influence of the Carpathian Convention on national agri-environmental policies.

The assessments present an extensive survey of the overall and local situations of sustainable agriculture and rural development in the Carpathian mountains of the three countries. They specifically focus on crucial aspects that need to be taken into consideration to provide elements for a diagnostic of policies, institutions and processes for SARD-M in the Carpathian region, namely:

(1) land-use, (2) employment in agriculture, (3) agricultural production and forestry, (4) economic performance of agricultural producers, (5) biodiversity value of farmland and forestland, (6) economic,

¹ See Brief Summary (<http://www.fao.org/sard/sard-m>) which also includes a regional policy SWOT assessment based on the three countries surveys prepared by Jan Seffer, Lead Consultant.

social and cultural aspects of rural development, (7) policies and strategies affecting SARD-M, (8) institutions in charge for designing and implementing the policies for SARD.

As an entry point for the analysis, Article 7² of the Convention on the Protection and Sustainable Development of the Carpathians was selected. The Carpathian Convention, a multilateral platform for cooperation between all the stakeholders at the regional level, attempts to achieve a good balance between the three pillars (i.e., economic, environmental and social) of sustainable development. It is hoped that the results of the assessments can be transferred into action on the ground in the Carpathian countries and lead to the development of policies that are acceptable and able to be implemented by stakeholders in a position to actively influence the process. The implemented activities are expected to potentially lead to the development of the future Protocol on the Sustainable Agriculture and Rural Development and Sustainable Forest/Forest Management to the Carpathian Convention on the basis of the conducted analyses under the "demand-driven" SARD-M project.

Undertaking such a comprehensive study is obviously a difficult exercise. As the assessments were to be conducted within a short period of time, they were meant to be an exercise of reflection that provides main elements for a diagnostic of the current strengths and weaknesses of the SARD-M policies. Given that SARD is a process that involves multiple sectors strongly linking agriculture and rural development and stakeholders at all governance levels, the assessments were heavily driven on the collections of the opinions of the different components of society at different levels, i.e. national and decentralized levels of government, civil society, including the private sector, and also take into consideration the multi-sectoral nature of SARD.

Approaches and techniques employed within the analysis depended to some degree on the availability of reliable statistics and time-series data. This however was not always available for mountain regions, which hampered efforts to achieve accurate project results. Nevertheless, even where discrepancies and challenges exist with respect to data availability, the assessments should be viewed as an opportunity to identify data gaps and encourage the collection of relevant information for future endeavours.

The development of policies for sustainable development is an iterative process that allows for national and local levels to act in a coordinated and participatory manner to develop coherent policies that balance the economic, social and environmental objectives of sustainable development. It is therefore important to see if processes/mechanisms are in place to allow for a country, within and outside the government, to learn from its experiences in order to develop the human and institutional capacities to act strategically for sustainable rural development in mountain regions taking into account mountain specificities of the Carpathian region.

The results and findings of the assessments should serve as a basis for strategy and policy planning in the Carpathian mountain region. They should be adapted to the national situation after stakeholder consultation and demonstrate complementarity with the Carpathian Convention principles and goals. With the aim of furthering progress towards sustainable development in the framework of the Carpathian, follow-up actions which promote opportunities and address the challenges raised in the agriculture and rural sector of the Carpathian Mountains and encourage the relevant stakeholders and governmental departments to work together and put in place policies that are mutually supportive are important to be pursued.

² The text of Article 7 is provided in the Annex 1.

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Abbreviations and Acronyms

Art.	Article
asl	above sea level
Carpathian Convention	Framework Convention on the Protection and Sustainable Development of the Carpathians
CAP	Common Agricultural Policy (EC)
DG	Directorate-General
EC	European Community
EAGGF	European Agricultural Guidance and Guarantee Fund
e.g.	<i>exempli gratia</i>
EPA	Environmental Protection Agency in Romania
EU	European Union
EUR	Euro
FAO	Food and Agriculture Organization of the United Nations
FIFG	Financial Instrument for Fisheries Guidance (within EU system)
Fig.	figure
GDP	Gross Domestic Product
GEF	Global Environment Facility
GMO	Genetically Modified Organism
ha	hectare
i.e.	<i>id est</i>
ICAS	Forest Research and Management Institute in Romania
IUCN	World Conservation Union
ICAS	Forest Research and Management Institute in Romania
kg	kilogram
LFA	Less Favoured Areas
m	metre
m ²	square metre
m ³	cubical metre
MAFRD	Ministry of Agriculture, Forests and Rural Development in Romania
MCPFE	Ministerial Conference on the Protection of Forests in Europe
MEA	Multilateral Environmental Agreement
MEWM	Ministry of Environment and Water Management in Romania
MoA SR	Ministry of Agriculture in Slovakia
MoEc SR	Ministry of Ecology in Slovakia
NEAP	National Environmental Action Plan in Romania
NAMA	National Agency of Mountain Area operating within the Romanian Carpathians
MAFRD	Ministry of Agriculture, Forests and Rural Development
NEPA	National Environmental Protection Agency in Romania
NFA	National Forest Authority in Romania
NFPS	National Forestry Policy and Development Strategy for Romania
NDP	National Development Plan
NGO	Non-Governmental Organization
NPARD	National Programme for Agriculture and Rural Development in Romania
REPA	Regional Environmental Protection Agency in Romania
RO	Romania
SAPARD	Special Action for Pre-Accession Measures
SARD	Sustainable Agriculture and Rural Development
SARD-M	Sustainable Agriculture and Rural Development in Mountain Regions
SCI	Sites of Community Interest
SDA	State Domains Agency in Romania
SKK	Slovak Koruna (Slovak national currency EUR 1 ≈ SKK 38)
SME	Small and Medium Enterprise
SPA	Special Protection Areas

SR	Slovak Republic
TDFRH	Territorial Directorates for Forestry Regime and Hunting in Romania
UA	Ukraine
UAH	Ukrainian Hryvnia (Ukrainian national currency; EUR 1 ≈ UAH 6)
UN	United Nations
UNDP	United National Development Programme
UNEP	United Nations Environment Programme
UNEP-Vienna ISCC	United Nations Environment Programme – Vienna Interim Secretariat of the Carpathian Convention
UNESCO	United Nations Educational, Scientific and Cultural Organization
USD	United States Dollars
WWF	World Wide Fund for Nature
WWF DCP	World Wide Fund for Nature Danube Carpathian Programme

Introduction

Aim of the report

The aim of this report is to contribute to the regional analysis of strengths and weaknesses of the mountain policies in the Carpathians in order to raise awareness of the importance of SARD-M policy issues among governments, NGOs of the region and donor organizations for further promotion, dissemination and utilization of the assessments' outputs in the framework of the Carpathian Convention process.

This report addresses the countries in the Carpathian region and all interested parties as well as the general public, to inform about the results of the first analyses in Romania, Slovakia and Ukraine, and prepare for the further consultation process directed towards the development of a future Protocol to the Carpathian Convention on SARD and Sustainable Forest Management.

Problem Statement

The Carpathians, a mountain range in the south-eastern part of Central Europe, covers approximately 210,000 km² and extends into eight countries in Central and Eastern Europe. The region is currently home to approximately 18 million people. It has a remarkable natural and cultural heritage and presents a unique ecosystem with an exceptionally rich biological and landscape diversity. The Carpathians, relatively undisturbed mountains, are also home to a great reserve of pristine forest and a refuge for many endangered species of plants and animals (i.e. brown bears, wolves, bison, lynx, eagles and some 200 unique plant species found nowhere else in the world), diverse in both natural and human respects. In this regard, the Carpathians constitute a major ecological, economic, cultural, recreational and living environment in the heart of Europe, shared by numerous peoples and countries.

The Carpathians are facing such common challenges as economic transition, changes in land ownership and ongoing privatization, land abandonment, low productivity and income of agriculture, poverty and marginalization of population, lack of technology and state funding, gaps in or, in some countries, absence of appropriate agricultural policy and legislation, etc. Therefore, these regions are facing the task of finding key resolutions and provide recommendations, both individual and joint ones, to cope with existing challenges and difficulties facing their future.

Since 2003, the Carpathian mountains have "their own" Carpathian Convention designed by the governments of the Carpathian countries in cooperation with West European countries and UNEP to address the important and ecological, cultural and socio-economic value of mountain regions. At the Fifth Ministerial Conference "Environment for Europe" (Kiev, 22 May 2003), seven Carpathian countries - Czech Republic, Hungary, Poland, Romania, Serbia and Montenegro, Slovak Republic and Ukraine, adopted the Framework Convention on the Protection and Sustainable Development of the Carpathians, designed to be an innovative instrument to ensure protection and foster sustainable development of this outstanding region and living environment, situated in the heart of Europe.

Structure and contents of the report

The report presents a cohesive collection of the three national reports on the status of SARD-M in the Carpathian mountain regions of Romania, Slovakia and Ukraine. The reports provide relevant information at the national level regarding agriculture, forestry sector, land-use, rural development, institutional processes and SARD-M related policies. It also contains SWOT analyses of the national SARD-M related policies in the mountain regions.

The report is comprised of nine chapters; each chapter is divided into three national surveys on the related issue. The first six chapters aim to articulate concerns and highlight the present condition of land-use management, employment in agriculture, agricultural production and forestry, biodiversity value of farmland and forestland and outline the rural development status in the mountain regions of the three countries.

Chapter seven examines the major existing national policies and strategies affecting directly or indirectly affecting sustainable agriculture and rural development in the mountain regions of each country. An overriding consideration in this chapter is the opportunity to pursue policies that will contribute to sustainable development and capacity building, which could be facilitated in the framework of the Carpathian Convention as a starting point. Special attention has been paid to the European Union (EU) integration process and its consequences for the strategic and political process related to the SARD-M. It is argued that the EU is a major factor, both positive and negative, for sustainable rural development and biodiversity conservation in the Carpathian Mountains.

Chapter eight outlines the role of national institutions responsible for designing and implementing the policies for SARD in the mountain areas including an analysis of their strengths and weaknesses.

And, finally, the analysis of challenges and opportunities for SARD-M in Romania, Slovakia and Ukraine is introduced in Chapter nine of the report. It is underlined that at present, agriculture and rural development are facing challenges that need to be addressed by adequate responses, through the incorporation of a "mountain" component into national policies and national rural development strategies or even planning separate "mountain"-oriented strategies at the local level (example from Romania).

1. Land-use in the Carpathians since 1990

Romania

More than half of the Carpathian mountain range lies within Romania and occupy more than 32.6% of the national territory.

In order to apply the Law no. 347/2004 of the Mountain Region, the surface of the mountain region in Romania was delineated according to the criteria stipulated in the Governmental Decision no. 949/2002. The delineation and the list of localities included in the mountain region were published in the Common Order of the Ministry of Agriculture and Rural Development and the Ministry of Administration and Internal Affairs - Order Nr. 328/2004 for the approval of the delimitation of the cities and communes of the mountain region.

According to the *Corine Land Cover*, provided by the Romanian Ministry of Environment and Water Management (MEWM), the Carpathian Mountains area of 6,977,712 ha could be divided into the following land-use categories:

Table 1: Carpathians Mountains in Romania according to Corine Land Cover

CORINE Code	Size (ha)	Land category
211	256,036	Non-irrigated arable land
221	7,930	Vineyards
222	67,738	Fruit trees and berry plantations
231	859,620	Pastures
242	245,197	Annual crops assoc. with permanent crops
243	245,211	Complex cultivation patterns
321	246,362	Natural grasslands
---	1,928,094	Total agricultural land comprises 28% from the entire area of the Carpathian Mountains
311	2,292,611	Broad-leaved forests
312	1,106,205	Coniferous forests
313	952,983	Mixed forests
324	357,036	Transitional woodland-scrub
---	4,351,799	Total forests area comprises 62 % from the entire area of the Carpathian Mountains

Source: Romanian Ministry of Environment and Water Management, 2005

From the administrative point of view, according to the data obtained from the National Agency of Mountain Area operating within the Romanian Ministry of Agriculture, Forests and Rural Development (MAFRD), the mountain region in Romania consists of an agricultural land: 2,630,280 ha including: arable land: 539,462 ha, orchards: 50,737 ha, vineyards: 3,762 ha, pastures: 1,173,703 ha, hay meadows: 862,611 ha and of 3,886,233 ha of a forest land.

Additionally, the forestland in the mountain region covers 4,106,855 ha according to the Romanian National Forestry Authority.

There are significant differences between the administrative statistics and the *Corine Land Cover* results and findings in regard to the forestlands and pastures/hay meadows. This is because the forested pastures (areas used by villages as pastures, but covered with forests, or former pastures abandoned and afforested naturally) are not included into the administrative statistics of the National Forest Fund.

With respect to the ownership status of the main land-use categories, it is important to mention that in case of pastures and hay meadows no relevant changes occurred after 1990. It could be explained by the fact that during the communist era in Romania, the mountain grasslands were private properties of the communities, administrated by the Local Councils. The establishment of state cooperatives in mountain

regions had failed. Now the communities own 80% of pastures through the mediation of Local Councils. Also the hay meadows and orchards are almost totally privately owned.

If in 1947 only 30% of the forests had been in state property, during the communist era until 1990, the entire forestland was state owned.

Since 1991, large areas of forestland have been reclaimed to the former owners, according to the land restitution laws (Law no. 18/1991 and Law no. 1/2000). At present, 65% of the forest area is state-owned, 24% is owned by various entities/institutions, including local public administration, and 11% is owned by private owners. Private individuals own areas from less than 1 ha to 10 ha. In the Romanian Carpathians almost 1,600,000 ha (41%) of the forestland from the total area of 3,886,233 ha, are private property. Also, according to the newly adopted laws related to property and restitution issues in Romania (Law no. 247/19.07.2005 regarding reform in the property and justice domains), 70% of national forests will be transferred into private property.

Concerning the evolution of the main land-use categories in the Carpathian Mountains, it could be mentioned that the most significant changes in the past years have been connected to a trend of land abandonment. This has caused a decrease in the pasture area as they became gradually covered by forest in an uncontrolled natural manner.

Regarding forests, statistics show that there were no major changes after 1990. Nowadays, as well as in 1990, the forestland in Romania covers an area of more than 6.2 million ha. Illegal cuttings have not been appropriately quantified until now and a full inventory of the forest area has not been made since 1986.

Slovakia

In Slovakia, the Carpathians cover an area of 36,491 km², equalling 74.4% of the total land territory. The mountain regions, delineated according to the average altitude and sloping rate, cover an area of 27,187 km², equalling more than 55% of the total land territory. Nowadays, the Slovak rural territory represents 87% of the total land area and the Slovak rural population (settlements under 5,000 people) represents 43.7% of the total population.

The Slovak total land territory covers an area of 49,034 km². In 2004, of the total land territory, the share of agricultural land comprised 49.7%, the share of forestland was 40.9%, and the share of non-agricultural and non-forested land area was 9.5 %.

Table 2: Area of different land types in Slovakia (as of 1 January 2005)

Land category	Size (km²)	Share in %
Total land size	49 034	100.0
Agricultural land	24 348	49.7
Forest land	20 049	40.9
Water areas	933	1.9
Built-up area	22 557	4.6
Other areas	1 448	2.9

Source: Institute of Geodesy, Cartography and Cadastre of the Slovak Republic, 2005

In 1990, the size of arable land per capita was 0.28 ha. Over the last ten years, the size of arable land per capita has slightly dropped, and it is currently 0.27 ha.

Table 3: Area of Slovakia that Carpathian Mountains cover by land type (as of 1 January 2005)

Type of land	Slovakia (km ²)	1996		2004	
		Carpathian region (km ²)	Share in %	Carpathian region (km ²)	Share in %
Total land size	49 034	34 235	69.8	34235	69.8
Forest land	20 049	17 278	86.2	17385	86.7
Agricultural land	24 347	14 197	58.3	14 109	57.9
of which: arable land	<i>14 305</i>	<i>6 129</i>	42.8	<i>5 741</i>	40.1
permanent grasslands	<i>8 811</i>	<i>7 458</i>	84.6	<i>7 779</i>	88.3

Source: Institute of Geodesy, Cartography and Cadastre of the Slovak Republic, 1997, 2005

In the Carpathian region, from 1996 to 2004, there was a reduction in the area of agricultural land of 88 km² and a decrease of 388 km² of arable land. The area of forestland increased of 107 km², permanent grasslands of 321 km². The decrease of agricultural land was mostly due to afforestation and construction activities. There was recorded a reduction in the size of arable land, and increase in permanent grasslands.

Apparently, a trend in the reduction of agricultural land caused by afforestation will continue in Slovakia. The afforestation of the agricultural land by 24 km² is one of the aims of agricultural and forest policy for the period 2004-2006 (MP SR, 2003c). Besides that, abandonment of agricultural land has resulted in habitat degradation and destruction, secondary succession and development of plant communities with ruderal and undesirable plants. This might contribute to the further spreading of forests in the mountain regions as well.

From an environmental point of view, the arrangement of land is a very important factor. In 1948, the grouping of farms into large collective structures started and resulted in deep changes in the landscape. These changes involved the arrangement of land into large plots and a spatial specialisation in land use. Both were applied on a large scale regardless of the agro-ecological conditions. This negative influence on the environment has persisted in many regions even today.

Ukraine

In the Ukraine, mountains cover a territory of more than 24,000 km² or 37,000 km² including the foothills within the bounds of four administrative regions: Transcarpathian, Ivano-Frankivsk, Lviv, and Chernivtsi.

Since 1993, a notion of the "Carpathian region" has also been used in the Ukraine to signify a component part of the Hungarian-Ukrainian-Polish-Slovakian-Romanian Carpathian Euro Region, which entirely covers the territory of the four above mentioned regions having total area of 56,600 km².

In order to determine the scope of the Carpathian Convention, Ukrainian experts have used a geographical approach which delineates mountain territories on the basis of altitude. Thus, the scope of the Convention in the Ukraine includes a territory with settlements situated at altitudes of 400 m asl and higher (Table 4).

This report focuses on the territory of 18,900 km², which makes up 79% of Ukrainian part of the Carpathians (Annex 2, Fig.1), within the bounds of 17 administrative units (including 2 City Councils, 15 districts), where more than 50% of settlements have a mountain area status.

611 settlements with a population of 1,059,900 people (as of the beginning of 2004), are situated in this territory, which equals 86% of the total number of settlements with mountain status in the Ukrainian Carpathians. 73% of population are rural inhabitants. The general population density rate for the mountain area is 56 persons per km².

In early 2004, the area of agricultural land including arable land, fallow land, orchard and berry-field, and grassland was 509,800 ha or 27.0% of the total territory of the Ukrainian part of the Carpathians. Compared to 1990, the area of such land has grown by 49,600 ha (+2.6%) due to the increased share of

arable land explained by the change of farming orientation after land reforms in the Ukraine. The first stage of the reform from 1990-1995 involved denationalization of land owned by former collective farms and transfer of that land into private property. In 1995, the process of land sharing started, which involved the issuing of Certificates and State Acts for land parcel ownership to land owners and Certificates of Property (part of former so called "kolkhozes" property: agricultural equipment, buildings, etc.).

Table 4: Mountain administrative units in the Ukrainian part of the Carpathians

Mountains administrative units	Number of settlements			Area, 1000 km ²	Population, 1000 persons		Rural population %	Density of population person/k m ²
	total, units	with the status of mountains			total	rural population		
		units	%					
Transcarpathian region								
Velyki Bereznyi*	32	27	84	0.8	27.5	20.7	75	34
Volovets ^{1*}	26	26	100	0,5	25.0	18.8	75	50
Mizhhir'ya*	44	44	100	1.2	49.4	39.8	81	42
Rakhiv*	32	28	88	1.9	90.5	54.5	60	48
Tyachiv*	62	31	50	1.8	171.9	126.4	74	96
Sum	196	156	80	6,2	364,3	260,2	71	59
Ivano-Frankivsk region								
Bolekhiv**	11	8	73	0.30	21.2	10.7	50	71
Yaremche**	7	7	100	0.70	21.5	9.7	45	33
Bohorodchany*	41	27	66	0.80	69.2	57.8	84	87
Verkhovyna*	43	43	100	1.25	29.7	24.2	82	24
Dolyna*	43	37	86	1.25	70.5	47.5	67	56
Kosiv*	46	31	69	0.90	86.6	75.2	84	100
Nadvirna*	47	32	63	1.30	113.6	71.6	63	87
Rozhnyativ*	51	39	76	1.30	74.9	52.8	70	58
Sum	289	224	78	7,8	487,2	349,5	72	63
Lviv region								
Skole*	56	56	100	1.5	48.9	35.8	73	33
Saryi Sambir*	115	57	50	1.3	80.8	62.7	76	65
Turka*	67	67	100	1.2	53.4	44.3	83	45
Sum	238	180	76	4.0	183.1	142.8	78	46
Chernivtsi region								
Putyla*	51	51	100	0.9	25.3	22.0	87	29
Sum	51	51	100	0.9	25.3	22.0	87	29
Total sum	774	611	79	18.9	1059.9	774.5	73	56

* - district; ** - city council

Source: Regional and local authorities, 2005

In respect to the administrative units, the most substantial changes have been observed in Ivano-Frankivsk and Lviv regions, where the area of agricultural lands increased by 36,300 ha and 18,500 ha, respectively. At the same time, in the Transcarpathian region, the area of agricultural lands decreased by 8,000 ha. Among the administrative districts, the largest change of the area of lands of such type has been observed in three districts: Verkhovyna, Kosiv and Turka, where the areas have respectively increased by 12,200 ha, 11,300 ha and 11,300 ha. The largest decrease of agricultural land area was in Tyachiv district and amounted to 4,700 ha.

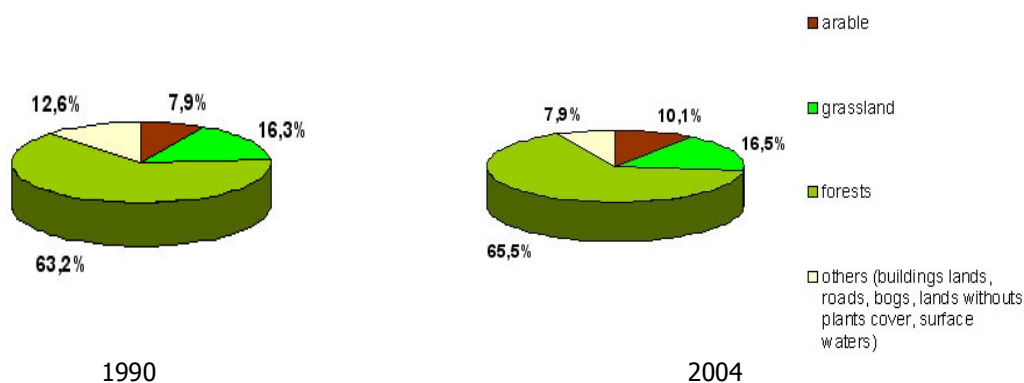
According to the data of the State Management of Land Recourses in Lviv, Ivano-Frankivsk, Chernivtsi and Transcarpathian regions in 1990-2004, the area of arable lands increased by 5,100 ha in the Transcarpathian region; 18,000 ha in the Ivano-Frankivsk region; 18,000 ha in the Lviv region; and 300 ha in the Chernivtsi region.

In general, in the Ukrainian part of the Carpathians, the share of the arable lands increased from 7.9% to 10.1%. The areas of pastures and hay meadows including perennial plantations increased by 3,700 ha (0.2%), although in the Transcarpathian and Lviv regions, the areas decreased by 2.2% and 0.8%, respectively. During the last 15 years the largest decrease of the area of natural pastures and hay meadows have occurred in the Skole, Volovets', Tyachiv and Dolyna districts.

The change in the areas of the agricultural lands during the analyzed period is connected with the land reform. A certain amount of land in the two categories (arable lands and pastures/hay meadows) was given to workers of the former agricultural enterprises (collective farms or state farms), who had been the owners of the land fund before the collectivization process.

In most cases, hay meadows and pastures prevailed in the structure of agricultural lands in the Ukrainian Carpathians, because the main specialization of local former collective and state farms was livestock-breeding and forage production. In 1992, the privatization of the agricultural lands and development of plans for correcting the agricultural land amount and quality have started. A part of the hay meadows and pastures, which were suitable for tillage, were turned into the arable land which resulted in an increase of the arable land area.

Figure 2: Breakdown of agricultural and forest land in the Ukrainian part of the Carpathians



According to the data of the Regional Management of State Forests, of the four regions under study, the area of forests in the Ukrainian Carpathians has increased by 38,100 ha (2.3%) during 15 years and constitutes 65.5% of the analyzed territory (Fig. 2). The extension of the forest area was caused not only by the increase of amount of forest plantations, but also because of the inclusion of forest shelter-belts along roads, railroads, etc. into this land category.

2. Evolution of the employment structure

Romania

According to NAMA/MAFRD data obtained, out of the entire population of 2,850,738 people inhabiting the mountain region, 1,360,525 are farmers and 769,114 are owners of livestock and farmland.

In the mountain region, there are 895,000 households, of which 263,434 households own cows and 191,885 households own sheep.

The greatest part of the population employed in agriculture operates within their own households: 46.6% of farmers are self-employed persons who head their own family farms. The unpaid family workers represent another part almost as great and make up 43.8% of the total. In regard to employment in agriculture, household farms prevail (90.4% of the total).

Self-employed workers are mostly older people; more than two-thirds of them are over 50 years of age, and one-third - over 65 years.

Among family members that contribute to household agricultural activities, people younger than 25 years of age constitute a great share. They account for more than a quarter of the total family workers.

Despite a relatively significant segment of young people in the rural area, old people are the owners and have a leading position in the households.

Slovakia

Until the end of the Second World War, development in agriculture was similar to Western European countries. From the viewpoint of land ownership, there were two main groups. The first are individuals, churches or foreign corporations that owned large estates. The largest estates covered more than 5,000 ha. Independent farmers formed the second group. They managed areas of 1 to 10 ha. The ratio of total land area utilised by small farmers and large-scale landowners was approximately 70% to 30%. Specialisation of plant or animal production did not exist at that time.

After the Second World War, nationalization of the large private estates took place. The state became the sole owner and private ownership was revoked. In the beginning of the 1950s, small farmers joined cooperatives under political pressure. During the first phase of collectivization, co-operatives were created in each village. Later on, in the early 1970s, a number of villages were joined into one large common co-operative. Some of the large co-operatives followed mixed crop-livestock systems. Specialisation of plant and animal production, intensification and mechanisation were typical features of that period.

After the political changes in 1989, the collectivised holdings were largely privatised and legislation supported the return of land to its original ownership. However, the process of restoring land ownership is still in progress. Only 52% of the total acreage of 2.4 million ha of agricultural land is registered on certificates of ownership with the following division: in ownership of former owners 1054,128 ha (43.2%), in ownership of legal entities 110,932 ha (4.5%) and in the state ownership 99,415 ha (4%).

Large co-operatives were in many cases divided into smaller ones linked to the original villages. However, the continuation of large units is not unusual and they have managed to keep their dominant position in agriculture, although their share in the total acreage of the agricultural land has fallen. New limited companies and stock and trade companies have been established on rented land.

This process has resulted in an increase in the number of farms. In 2003, there were 8,204 registered farms in Slovakia. By contrast, the number of workers has still been decreasing, from 294,400 workers in 1990 to 99,400 workers in 2003.

Table 5: Changes in the types of farms in Slovakia since 1990

Farm type	Number of farms			
	1990	1994	2001	2003
State enterprises	73	211	6	5
Co-operatives	681	961	715	637
Business companies		137	721	836
of which:				
Limited companies	0	98	627	737
Joint stock companies	0	29	94	99
Other forms of legal entities	-	59	80	66
Legal entities in total			1 522	1 544
Registered individual farms	2 437	7 572	5 473	6 124
Enterprises with agricultural land in total	3 191	8 931	6 995	7 668
Enterprises without agricultural land in total	-	-	515	541
Enterprises in total	3 191	8 931	7 510	8 209
Unregistered individual farms	-	-	62213	

Source: Ministry of Agriculture of the Slovak Republic, 2005

Table 6: Number of people employed in agriculture in Slovakia

Year	1970	1980	1990	1995	2000	2001	2002	2003
Number of workers	451 400	331 300	294 400	197 200	115 300	106 400	108 900	99 400

Source: Ministry of Agriculture of the Slovak Republic

The majority of those employed in agriculture work in co-operatives. An unfavourable development has been seen in the age structure of agriculture of the agriculture sector, because the biggest increase in number of workers is in the range of 50 – 54 years.

In 2001, public sector utilised around 10% of the agricultural land in the mountain regions, co-operatives utilised approximately 60% of the arable land and 65% of the permanent grasslands. In Slovakia, 29% of the arable land and 25% of the permanent grasslands were utilised by the private sector in the mountain regions.

It is necessary to add that because of financial and legal uncertainty or lack of investment, land abandonment has occurred in Slovakia, mainly in the marginal mountain farming areas. In 2002, 74% of grasslands were managed, 13% were not managed and there was no data concerning the management of the remaining 13%³.

Ukraine

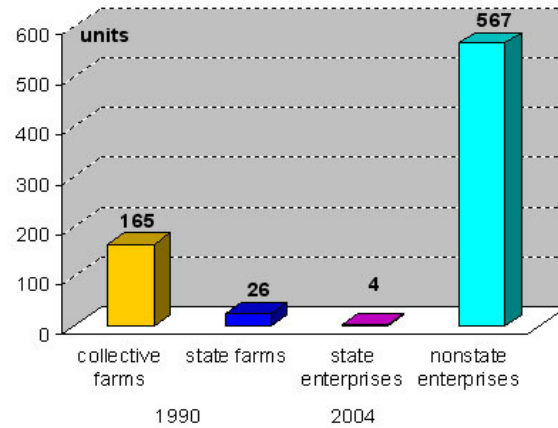
The agricultural sector plays an important role in the economy of the Ukrainian part of the Carpathians. The natural conditions of the territory are favourable for growing most of the temperate zone crops. Traditionally the mountain regions are specialized in cattle breeding, sheep breeding, forage crops, grain crops (rye, barley and oat), industrial crops (maze and mangel), potato, other vegetables and fruits.

At the present stage, the agricultural sector is still unstable. Because of the reforms, the collective farms and state farms do not monopolize the agricultural market any more.

Before 1990, 165 collective farms and 26 state farms were found in the mountain regions of the Ukrainian Carpathians. The total area of the agricultural lands in the former collective farms was in the range 1,100 – 5,200 ha.

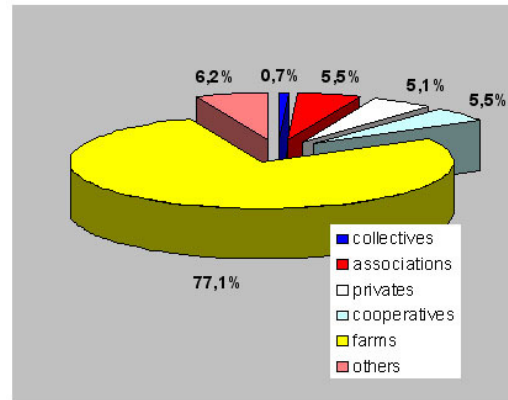
³ Šeffler *et al.*, 2002.

Figure 3: Number of agricultural enterprises in the Ukrainian part of the Carpathians since 1990



571 agricultural enterprises were registered in the Ukrainian Carpathians in the beginning of 2004. The proportion of individual farms prevailed (437 farms or 76% of the agricultural enterprises), while the non-governmental and governmental enterprises constituted 23% and 1%, respectively.

Figure 4: Types of enterprises in the Ukrainian part of the Carpathians (as of 1 January 2004)



By the forms of management, non-governmental agricultural enterprises could be divided into the following forms: collective enterprises, associations, private, cooperatives, farms and others. In 2004, there were altogether 130 of such enterprises.

Only four state-owned agricultural enterprises worked in the Ivano-Frankivsk region – Bohorodchany and Kosiv districts, and Bolekhiv City Council.

According to the calculations based on the statistical data in 1990, the able-bodied rural population was 373,000 persons or about 50% of the total rural population. 122,000 people (32.7% of the able-bodied rural population) worked for the collective and state farms.

During the past 15 years, the statistical indicators of the employment rate of the population working in agriculture have changed. After agricultural reforms, the official statistics consider employees as those who work at the agricultural enterprises permanently. In the reports, the seasonal and temporal employees as well as farm workers are not shown.

In 2004, 22,000 persons (5.7% of the able-bodied rural population) worked for the agricultural enterprises of different ownership forms. Thus, in 2004, the number of people employed in agriculture enterprises decreased by 100,000 persons or by 82% of the level of 1990.

Before 1990, people who worked individual farms and at the same time were employed by enterprises of other industrial sectors (forestry, industry, etc.) have not been accounted for in the statistics. Nowadays,

there are 170,000 people in this category or 44.3% of the able-bodied rural citizens. The percentage of the persons working in the agriculture includes employees of the agricultural enterprises as well as persons working on individual farms. In 2004, the share constituted 50% of the able-bodied rural population (approximately 194,000 persons).

Household farms situated in the mountain region are characterized by a number of common features resulting from both similar economic conditions and social qualities. This territory belonged to Austrian-Hungarian Empire, and so agriculture collectivization began later than in other regions of Ukraine.

During the transition period, huge changes have occurred in the agricultural operations performed by household farms (Table 7). In the period from 1990 to 2000, the number of households owning land parcels grew by 25.7%, while the land parcel area increased by 54.5%. The ratio of farming land area per household grew by 0.09.

Table 7: Ratios of farming land area and livestock in household farms in the mountain area of the Ukraine

Index	% in 2000 relative to 1990
Number of households owning a land parcel	125.7
Area of land parcels	154.5
Farming land area per one household	123.1
Available livestock, thousand head of livestock, including	108.5
- cows	131.7
- pigs	110.1
- sheep and goats	123.1
Number of livestock head per 100 households including	86.9
- cows	104.9
- pigs	87.8
- sheep and goats	98.0

Source: examples of mountain areas in Lviv and Ivano-Frankivsk region

The number of livestock in household farms was dynamically changing. Although the total number of livestock grew during the 10 year period, the number of livestock per 100 households shrank (the only exception was cow stock, which grew by almost 5%). Reduced livestock numbers could be explained by the fact that farmers had to procure feed for animals from their own land parcels. Most household farmers (80%) graze their animals on pastures in the summer time. Only 15% household farmers add green grass fodder to their feed. In winter, 50% of farmers feed the animals with only hay, 18% include some additional compound feed and 13% add forage roots in the animal feed.

The analysis of gross output at household farms both in the breakdown of main enterprises and in general shows a regular pattern. The output of crops, both total and per household tended to decrease.

Thus, the increase of household farm holdings during the period from 1990 to 2000 did not increase the gross agricultural output. Reduced output of agricultural products per household made by this category of farmers is explained by a number of reasons. The major reason is a fundamental change of the system of relations between household farms and various agricultural businesses and organizations. Primarily, the change affected the supply of young animals and poultry stock as well as feedstuffs of the household farms. During the Soviet period, villagers procured the major part of young stock, poultry and feed from the state-owned agricultural companies. With reforms, the supply from the large agricultural organizations decreased dramatically.

Improved quality of breeding stock is a key instrument to raise stocks performance and output.

There are still many problems also pertaining to crops enterprises. The major tasks are to provide household farms with high quality seeds, plant disease protection and pest control chemicals, mineral fertilizers, etc.

It is equally important for a rural family household to establish both efficient production and sales practices. Notably, sales processes are affected by territorial location of a specific farm. If all other conditions are equal, the farms situated near large cities or district central towns tend to have more marketing advantages than the remote ones. The former can sell their products at town markets, the latter need procurement organizations to purchase their produce.

3. Agricultural production and forestry

Romania

Crop production – area of main crops and average hectare yields, consumption of industrial fertilisers (N, P, K), area of ecological farming

The main crops produced in the mountain region are potatoes cultivated on almost 100,000 ha, with average hectare yields of 17,000 – 20,000 kg/ha; crops for animal feed are cultivated on 61,000 ha; crops of traditional varieties of corn are grown on small plots, important for the traditional seeds used, but because there are grown on small plots, there is no data on the total area cultivated in the Carpathian mountains.

After 1990, use of fertilizers (chemical and natural) at the national level has decreased significantly as shown in the table below:

Table 8: Chemical and natural fertilizers used in agriculture at the national level in Romania

Type/year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Chemical	1103	464	422	538	479	470	435	404	383	331	342
N	656	275	258	346	313	306	268	262	254	225	239
P	313	145	133	165	149	149	153	129	114	93	88
K	134	44	31	27	17	15	14	13	15	13	15
Natural	24791	16910	15792	17125	16945	17423	17871	16513	15842	16685	15813

Source: *Statistics of Romania, 2002*

In the past, the chemical fertilizers were not often used in the Carpathian mountains and they are almost not used even today. But taking into consideration the fact that the majority of farms are mixed, having both crops and domestic animals, the most used fertilizer are organic ones.

The main problems that occur in the process of using the natural fertilizers are connected with the absence of proper areas for depositing the manure and also with the inadequate timing for applying the natural fertilizers into the soil.

Regarding areas used for ecological farming (mainly pastures), from the total areas certified and inspected in Romania (70,000 ha), in the Carpathian mountains there are some 40,000 ha, mainly in the Dornele region situated in the north-eastern part of the Carpathian mountains. The grasslands certification fee is paid by milk processing companies.

In reality, almost all farmlands in the mountain region are organic/ecological, but the owners are not interested in paying a certification fee if they do not have an identified market.

Animal production – number and size of animal farms, types and categories of farm animals and their development since 1990

In the Carpathian mountains, there are 0.53 cow/ha with a possible carrying capacity of 1 cow/ha.

Also in the mountain region, the following types and numbers of farm animals are recorded: 719,329 – cows, 1,860,253 – sheep, 130,370 – goats, 162,000 – horses, 138,000 – bees' families.

The evolution after 1990 shows a small decrease in cows and sheep (11%), but the number of cows for milk remained the same as in 1990. Small increase in horses and bees were recorded during the same time period.

The farm animals belong mainly to many individual households/small farms (e.g. 263,434 households own cows and 191,885 households own sheep).

Timber production and its development since 1990

Forests cover a total surface area of 6.2 million hectares, representing about 27% of Romania's land area. Two-thirds of the forest area is located in the mountain area, 24% in the hilly area and 10% in lowlands.

Depending on the form of ownership, forests can be managed (including timber production) by:

State authorities: National Forest Authority (NFA) – County Forest Directorates through their Forest Districts;

Private and local public administrations: Private Forest Districts – established by private forest owners or local public administration as requested by the Regulations published in the Official Journal of Romania 597/12.08.1999 and Law 26/1996 or NFA – County Forest Directorates through their Forest Districts, on a contractual base.

The agreement is made between private owners and State Forest Districts. Individuals might also manage their forests by themselves, but there are specific activities, which are undertaken by state forest districts (e.g. selecting and marking trees to be extracted, providing documents for timber transportation, etc.). Extension services should be provided by the Territorial Directorates for Forestry Regime and Hunting (TDFRH).

The forest management is made according to the Forest Management Plans developed in accordance with sustainable forest management criteria. These plans are revised every 10 years and represent the basis for all forest management activities, including annual cutting allowance (per surface units and species).

Table 9: Total allowable cut and wood harvest in Romania

Year	Annual allowable cut (million m3)	Annual wood harvest (million m3)
1991	19	15.3
1993	15	13.6
1994	14.5	12.9
1995	14.4	13.8
1996	14.6	14.8
1997	14.8	14.5
1998	15.2	12.6
1999	15.5	13.7
2000	15.8	14.2
2001	17	13.4
2002	17	16.8
2003	16	16
2004	18	17.5

The limits of the annual allowable cutting at the country level are established by cumulating the allowable cut for each forest district of the national forest area (state-owned forest and private forest). This is based on data from an information system for forests, provided through the management plans developed for all forest districts.

The current method used to determine the allowable cutting according to the management plans is based on traditional sustained yield approach, which takes into account rotation length, average species composition, forest structure according to site indices and the existing distribution of age classes. Rotation length is calculated according to the maximum rent principle and has been set according to the average increment of the target dimensional class.

The wood is sold standing, except wood harvested by the NFA Forest Districts (logs sold roadside or in special locations - deposits).

After establishing the harvesting areas in accordance with the available allowable cutting, the forest districts follow bidding procedures (auction) for each harvesting area (according to GD No. 85/2004 for approval of timber selling procedures by the owners of public forests).

A small volume of wood, an amount that is decided through GD, is harvested directly by forest districts of NFA-Romsilva. These quantities are designated to satisfy forest management unit needs. Each forest district has also allocated a certain quantity of firewood to be sold to private individuals.

Standing wood/logs auctions are organized by NFA County Forest Directorate or by private Forest Districts under TDFRH guidance and the contracts are signed with the winning companies. The NFA that has for a long time been the main actor for the forest management in Romania, has improved its wood sales policy through short-term, middle-term and long-term (up to 10 years) contracts, for different types of clients in close connection with the direct use of wood. The new type of long-term contract between NFA (minimum 3 years, maximum 10 years) is available as a result of auctions for selected companies producing secondary wood products only. The companies can bid in auctions only if they prove the capacity to process a minimum 20,000 m³ of wood/year/company. The total amount available for long-term contracts will not exceed 20% of total annual allowable cutting. The starting prices in wood auctions are established by the National Competition Authority.

The capacity of the primary wood-processing sector is estimated at 17 million meters³ per year, but an important part of the primary and secondary timber industry has been operating under outdated technology, limited added value, poor knowledge of marketing and market information and little access to finance (grants and loans). At the national level, the forest road density index is 6.1 m/ha.

Before 1990, the state-owned logging and wood processing sector had been supported by a centrally-planned economy. Log prices were kept artificially low and Eastern Europe, ex-USSR bloc countries, and the Middle East were the most important markets.

The processing sector was specialized in producing mainly high quantities of low quality output.

In the context of missing investments in the sector, and because these markets have declined rapidly after 1990, the privatization of the state-owned forest industry complexes started in early 1990s. The consequences were the closure of many large units of forest industry and a rapid growth in the number of new privately-owned and operated sawmills. From 107 wood processing companies, and 244 companies in the total wood industry in 1990, there were approximately 4,000 wood-processing companies and approximately 7,000 companies by the end of 2000, but 96.5% of them were small and medium-sized (less than 500 employees).

Wood processing was directed mainly to lumber production in 2000, when the number of producing companies were analyzed. The timber used in wood processing was mainly softwood. This is very closely connected with the existing technology.

Exports of wooden products, excluding furniture, were USD 410 million in 2000.

Table 10: Changes in the total production of the wood products in Romania (furniture not included)

Year	Total Sawn wood 1000 m ³	Conifers Sawn wood 1000 m ³	Beech Sawn wood 1000 m ³	Oak Sawn wood 1000 m ³	Veneer mill. m ²	Ply - wood mill. m ²	Particle board 1000 tonnes	Fibre board 1000 tonnes	Pulp, paper, paperboard & articles 1000 tonnes
1994	1 723	891	548	88	37	90	200	103	897
1995	1 637	817	568	88	37	90	200	103	1170
1996	1 767	1 054	500	72	37	93	208	81	904
1997	1 738	1 030	525	67	33	91	182	74	1029
1998	1 618	1 051	427	45	24	75	130	46	922
1999	1 449	868	440	36	22	67	116	51	939

Source: Bud, N., 2000; Statistic Yearbook of Romania

Table 11: Number of companies processing different types of wood products in Romania

Type of products	Number of producing companies from the total analysed	
	number	%
Lumber	113	90
Solid parquet	19	15
3-layers parquet	2	1.5
Garden furniture	15	12
Small furniture	38	30
Windows/doors	22	18
Semi-products	49	39
Wooden houses	18	14
Packages	19	15
Other	15	12

Source: Ministry of Industry and Trade- MIC, 2000

Table 12: Raw material used in wood processing in Romania

Type of timber	Number of producing companies from the total analysed %
Softwood (conifers)	84
Oak	65
Beech	74
Poplar	16
Other	7

Source: Ministry of Industry and Trade- MIC, 2000

After 2000, there were important investments and developments in the wood industry sector. In 2002 by the Piatra Neamt Forest Directorate, the first certificated forests (by Forests Stewardship Council) have been reported and this process continues nowadays. Activities for certification of private forests and for the certification of "chain of custody" have also been initiated.

Case Study: Investments in timber production in Romania

Some important developments with important inputs in the wood industry sector must be mentioned. Among them are the following:

- Gruppo Fratti, Italy, started in 1997 in Sebes; Alba, continues the development of investments in MDF factories (input 900,000 tonnes of raw material/year-80% broadleaves, 20% coniferous). It is important from the ecological point of view because the wood residues are also being used;
- Finn forest corporation- Finland invested in Northern Romania (Moldova) for timber and MDF production and will invest in Southern Romania in order to build a new Pulp factory;
- Kronno Gruppe from Switzerland has started an important investment in the Central Romania, Brasov- MDF factory;
- Losan from Spain made in 2001-2002 an important investment for producing a veneer factory in Central Romania - Brasov (input logs 35,000 m³/year; output veneer: 35 millions m²/year). The development of new investments is ongoing.
- Werzalit (Constantia Group); Germany, has developed in Lugoj (Western Romania) an important investment for veneer products (input logs 25,000 m³/year). The whole production is for export.

Non-wood forest products

"Traditional non-wood forest products" are an important production activity of NFA, which controls the main part of this activity in Romania: willow for wicker products, forest fruits (bilberry, raspberry, strawberry, wild rose and blackberry), mushrooms, medicinal plants, game meat, game animals, hunting, live game, fishing and trout farms, Christmas trees and foliage, forest seeds and ornamental products. 90% of the production is exported and the rest is for the domestic market.

The production is regulated by the Forest Code, which states that non-wood products from the "forest fund" must be harvested under technical conditions specified by the Central Authority for Forests (Ministry of Agriculture, Forests and Rural Development) including game and fish from mountain waters which must be harvested only on the basis of authorizations issued according to harvesting plan and the laws in force. The private sector of traditional non-wood forest products has grown only slightly in the recent years, except mushroom harvesting which recorded a better development.

The forest management units prepare an annual production plan based on local historical data and prospective trends of market demand.

Slovakia

Crop production: area of main crops and average yields

Agricultural production in the mountain regions could be affected by lower soil fertility, shorter vegetation period and higher altitude, lower proportion of arable land and high proportion of permanent grasslands that characterizes mountain environments. Over 76% of permanent grasslands can be found in the mountain regions.

Table 13: Comparison of plant production between Slovakia and the mountain regions in 2000

Indicator	Unit	Slovakia	Mountain regions	Share in %
Cereals	ha	831 535	171 465	20.62
	t	1 224 198	355 695	16.00
	t.ha ⁻¹	2.67	2.07	-
Oil-producing plants	ha	173 893	29 203	16.79
	t	259 918	36 205	13.93
	t.ha ⁻¹	1.49	1.24	-
Potatoes	ha	27 067	15 172	56.05
	t	418 842	253 352	60.05
	t.ha ⁻¹	15.47	16.70	-
Annual fodder crop	ha	148 336	55 642	37.51
	t	2 235 556	750 034	33.55
	t.ha ⁻¹	15.07	13.48	-
Perennial fodder crops	ha	150 818	70 911	47.02
	t	614 605	229 441	37.33
	t.ha ⁻¹	4.08	3.23	-
Permanent grasslands	ha	831 163	643 387	77.41
	t	811 712	626 476	77.18
	t.ha ⁻¹	0.98	0.97	-

Source: Statistical Office of the Slovak Republic, 2002

Consumption of industrial fertilisers

In 1990, there was a decrease in industrial fertiliser consumption in Slovakia by more than 60% in terms of nitrogenous fertilisers, by 89% in terms of phosphate fertilisers and by 92.5% in terms of potassium fertilisers. The reduction in use of fertilisers was a result of economic necessity rather than environmental awareness.

Thus the present rates of fertiliser use are under the normative level of nutrient requirements for plant nutrition. The deficiency in plant nutrition is visible even on fertilised soil. In 2000, fertiliser consumption did not reach 50% of consumed fertilisers in the EU countries. Since 2000, there has been a slight increase recorded in fertiliser consumption.

Table 14: Fertiliser consumption per ha of agricultural land in Slovakia (in pure nutrient per ha)

Category of fertilisers	1990	1995	2000	2001	2002	2003	2004
Nitrate fertilisers	91.6	30.6	33.4	35.2	41.6	38.3	44.0
Phosphate fertilisers	69.0	7.8	7.3	8.1	8.7	8.4	8.9
Potassium fertilisers	79.1	6.6	5.9	8.2	8.3	8.5	8.5
Total consumption of fertilisers	239.1	45.0	46.6	51.5	58.6	55.2	61.4

Source: Central Control and Testing Institute of Agriculture

Organic farming

In 2004, area under organic farming reached 530 km², equalling 2.18% of the total agricultural area in Slovakia. There were 117 units registered in the system of organic farming, of those 35 farmers managed 42.63 km² and 82 legal entities managed 488.28 km² of the agricultural land.

Table 15: Organic farming area in Slovakia

	1991	1995	2000	2001	2002	2003	2004
Organic farming area (km²)	146 870	149 960	583 400	587 060	499 980	544 000	530 910
Share in % on the total agricultural land	0.59	0.61	2.39	2.40	2.05	2.20	2.18

Source: Ministry of Agriculture of the Slovak Republic, 2004

In 1991, there were 38 units involved in organic farming, 76 in 2002, of those 61 were in the Carpathian region⁴.

The aim of Rural Development Plan of the Slovak Republic 2004-2006 is to reach 1,200 km² of organic farming area (5% share on the total agricultural land). However, this aim will not be fulfilled and has been moved to Action Plan of Organic Farming in the SR by 2010.

Organic farming is particularly important in mountain regions as well as in protected landscape areas, with a 27% share of the total land territory. Intensive farming in protected landscape areas is restricted. From this point of view, support of organic farming is essential. An important factor for organic farming development is the development of an organic products market, currently almost nonexistent in Slovakia. The majority of organic products are exported to the EU countries.

Animal production

In the 1970s and 1980s, the number of cattle and poultry markedly increased in Slovakia. On the contrary, the number of sheep, goats and horses decreased.

From 1989 to 2003, significant changes occurred in livestock production. In animal production, a permanent decrease in the number of animals was recorded. During the 1990's, the number of cattle fell by 58%, pigs by 41%, sheep and goats by 35%, horses by 30% and poultry by 18%.

Table 16: Number of livestock in Slovakia (in thousand)

	1970	1980	1990	1995	2000	2001	2002	2003	2004
Cattle	1,330	503	1,563	929	646	645	608	593	540
Pigs	2,107	2,788	2,521	2,076	1,488	1,469	1,554	1,443	1,149
Sheep, lambs and goats	752	611	611	453	399	410	356	325	321
Horses	578	585	14	10	10	10	10	9.5	9.5
Poultry	13,196	15,811	16,478	13,382	13,580	13,612	13,959	14,216	13,713

Source: Ministry of Agriculture of the Slovak Republic, 2004

⁴ SEA, 2003.

In the Carpathian region, from 1999 to 2001, the number of cattle fell by 31,127, pigs by 28,409, sheep and goats by 18,319. The number of poultry, however, significantly increased by 1,516,690.

Table 17: Number of livestock in the Carpathian region of the Slovak Republic

	1999	2001	Difference
Cattle	441,758	410,631	- 31,127
Pigs	804,080	775,671	- 28,409
Sheep, lambs and goats	320,563	302,244	- 18,319
Poultry	6,986,035	8,502,725	+ 1,516,690

Source: Ministry of Agriculture of the Slovak Republic, 2004

In the mountain areas, 48% of the total number of cattle and 80% of the total number of sheep are kept. Almost a half of milk production, three quarters of lamb meat and almost all production of sheep meat is produced in the mountain regions (Table 18).

Table 18: Comparison of livestock production between Slovakia and the mountain regions in 2001

Parameter	Units	Slovakia	Mountain regions	Share in %
Cattle which of: cows	Pieces	644,900 272,600	308 900 142 500	47.9 52.3
Sheep which of: ewes	Pieces	358,400 212,500	287 400 176 000	80.2 82.8
Cow milk production	Thousand of litre	1,113,700	523 400	47.0
Cattle feeding production	Thousand of ton	18,105.8	439.3	35.5
Sheep and lambs production	Thousand of ton	3.42	2.73	79.8
Sheep milk production	L	9,048,100	8,414,700	93.0
Number of cattle per km² of agricultural land	Pieces	26.4	29.2	-
Number of sheep per km² of agricultural land	Pieces	14.7	27.2	-
Milk production per cow per year	litre	4,653.5	3,908.0	-
Beef production per cow per year	kilogram	66.4	45.2	-

Source: Ministry of Agriculture of the Slovak Republic

In 2001, the majority of registered farms were specialised enterprises (71%). The most popular specialization was in field crops (44.6%) and pasturing cattle. Non-specialized enterprises mainly consisted of organisations with mixed plant and animal production (16.9%) or mixed plant production (7%). The majority of unregistered individual farms conducted mixed farming.

Table 19: Number of farms according to specialization of agricultural production in Slovakia

	Registered farms in total	Legal persons	Registered individual farms	Unregistered individual farms
In total	7,510	1,636	5,874	63,528
Specialized in field crops	3,348	485	2,863	9,615
Specialized in garden tillage	74	17	57	49
Specialized in permanent crops	247	50	197	1,279
Specialized in pasturing cattle	1,214	314	900	11,688
Specialized in seed-fed animals	448	116	332	3,029
Mixed plant production	524	129	395	10,935
Mixed animal production	324	94	230	9,822
Mixed plant and animal production	1,267	413	854	16,949
Unclassified farms	64	18	46	162

Source: Ministry of Agriculture of the Slovak Republic, 2004

Timber production

Slovakia is one of the highest forested countries in Europe. In 2003, forest land covered 20,042 km², equalling 40.9% of the total land territory. Timber land represented approximately 96% (1,929,309 ha) of the total area of forest lands. Calculated to the number of inhabitants, this represents 3.72 km² per 1,000 inhabitants. The composition of the forests still remains similar, consisting of a majority of broad-leaf trees (58.7%) followed by coniferous trees (41.3%).

In 2003, 136 km² were afforested, including 39 km² or 29% afforested through natural regeneration. Total growing stock reached 428.2 million m³ of barkless wood matter. There is, however, an imbalance in regards to the age of the wood stock, with an abnormally high share medium-age trees and a below-normal share of cultivable trees. Abiotic harmful agents caused damages on 1.92 million m³ wood matter, of which 91.7% was caused by wind calamities.

From 1980 to 2003, the total volume of harvested timber rather varied. The volume of harvested timber (5.8 million m³) in 1980 decreased to less than 4.5 million m³ during the years 1991 – 1993. Afterwards, an increase in timber production was reported. In 2003, timber production reached more than 6.6 million m³. Incidental felling provided difficulties for planned felling. During the years 1990 - 2000, incidental felling represented almost a half of the total felling.

Table 20: Trend in timber felling in Slovakia (thousand of m³)

	1980	1990	1995	2000	2001	2002	2003
Volume of harvested timber	5 864	5 276	5 323	6 218	6 185	6 248	6 652

Source: Forest Research Institute, Zvolen

In Slovakia, timber felling is lower than annual increment of forested area. From this point of view, forest management is sustainable in Slovakia. The yearly felling is between 40% to 60% share of net annual increment.

Ukraine

Reforms in the agricultural sector of the Ukraine bear regional features, which can be explained by the specificities found in each of the territories. The Ukrainian Carpathians are the region where land reforms started the earliest. However, some negative trends such as decreasing production since 1990, increase of non-cultivated (though privately owned) land area do persist in the agro-industrial system of this territory. It could be stated that all the above problems exist due to a disintegration of productive relations and disrupted coordination of economic administration at all levels as well as reduced capital investment.

The decline of agriculture is caused by a great disparity of prices for industrial and agricultural products (so-called "commercial scissors"). Recently in 2004 and, in particular 2005, an increase of prices for agricultural goods was observed. At the same time, the prices offered for industrial products remain low which discourages them from production. On the other hand, the forestry sector went through much less of a change in the period of 1990-2004. The reason is, in our opinion, that the form of ownership for forests did not change, i.e. they are still owned by the state.

Crop production

Figure 5: Cropping area in agricultural enterprises and individual farms of the Ukrainian Carpathians, 2004

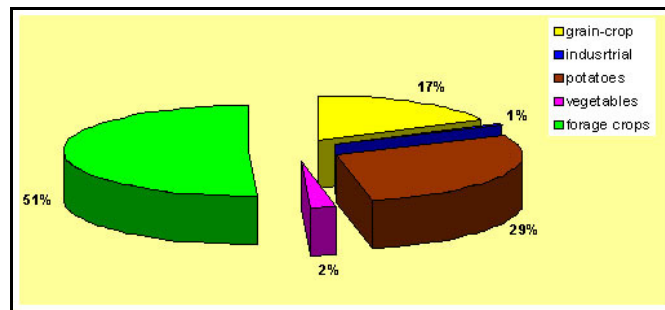
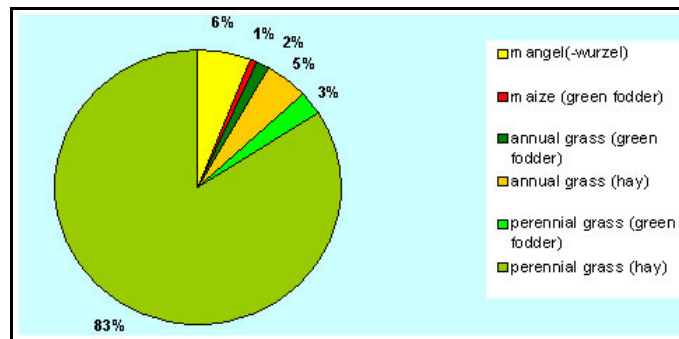


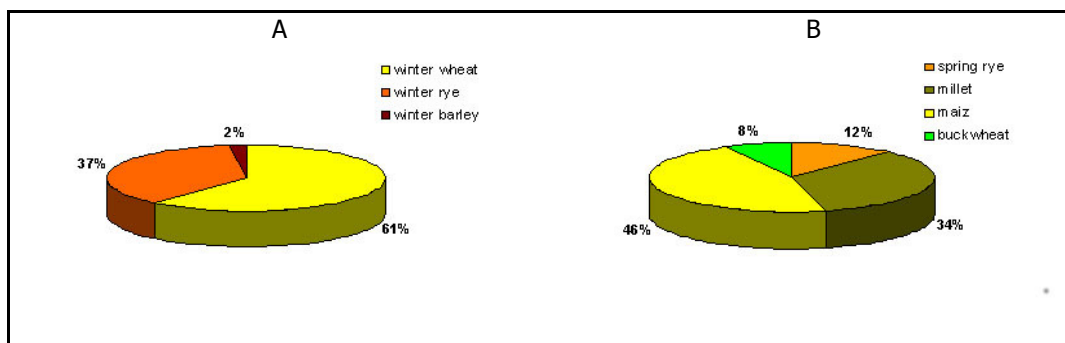
Figure 6: Area under forage crops in the agricultural enterprises and individual farms in the Ukrainian Carpathians, 2004



In 2004, the total area of arable land in the Ukrainian Eastern Carpathians was 173,500 hectares or 9.2% of the total territory in question. Forage crops occupied 88.3 thousand hectares, which is the largest area in the breakdown by crops on all types of farms. Potato enterprises were second with 50,700 hectares. The area under grain crops was 29,300 hectares. A smaller area, 3,700 and 1,600 thousand hectares, was used for vegetables and industrial crops respectively (Fig. 5). In 2004 the distribution of area under forage crops on farms of all categories was as follows: perennial grass (green fodder) - 83%; fodder beet (mangles) – 6%; annual grass (hay) – 5%; annual grass (green fodder) – 2% and maize (green fodder) - 1% (Figure 6). The area under grain crops on farms of all categories in 2004 was as follows:

- **Winter grains:** winter wheat – 61%; winter rye – 37%; winter barley - 2%;
- **Spring grains:** maize – 46%; millet – 34%; spring rye – 12% and buckwheat - 8% (Fig. 7).

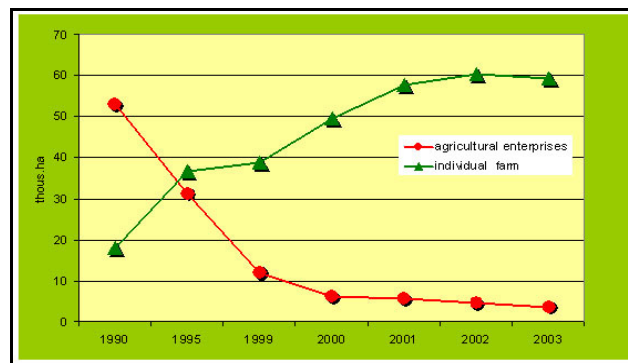
Figure 7: Grain crops area in agricultural enterprises and individual farms in the Ukrainian Carpathian (A – wheat grain, B – spring grain), Lviv region, 2004



The historical changes of crops area on farms of all categories from 1990 to 2004 were analyzed using the examples of the mountain districts of Lviv region only. Thus, the area was 70,700 ha in 1990. Within 15 years, the area had changed by almost 11% (63,100 ha). The proportion of the area devoted to various crops, however, has remained more or less the same, i.e. forage crops go first. The distribution of the area in 1990 was as following: forage crops – 68.3%; grains – 18.6%; potatoes – 9.2%; industrial crops – 3.7%. In 2004 the areas under forage and industrial crops reduced and accounted for 57.8% and 1.0% respectively. There was a notable increase of the area under potatoes – 20.9% and vegetables – 1.7%. The area under grain crops remained unchanged (18.5%). The increased area under potatoes is a sign of a rising need of the population for this product due to an altered structure of the food ration that has resulted from the economic situation.

In 1990, the area sown by farm businesses in mountain districts of Lviv region was 52,700 ha, while the area sown by households was 17,800 ha. In 2004, the households possessed 59,400 ha, while private farm businesses held 3,700 ha only (Fig. 8).

Figure 8: Dynamics of crop area in agricultural enterprises and individual farms, Lviv region, 1990 – 2003



Historical trends in the area sown by agriculture enterprises in Lviv region during 1990 - 2004 (Fig. 9) shows a dramatic decrease in the sowing areas of all crops, including forage crops – from 37,400 ha to 1,300 ha; grain crops – from 12,000 ha to 1,700 ha; potatoes – from 800 to 100 ha. At the same time, there was a natural increase in the area under different crops planted by household farms, namely: forage crops – from 10,900 to 35,200; potatoes – from 5,600 to 13,000 and grain crops – from 1,000 to 10,000 ha (Fig.10). Therefore, the process of crops area redistribution from agriculture enterprises to household farms was almost finished by 2004. A similar trend can be observed across the entire territory in question.

Figure 9: Dynamics of crop area in the agricultural enterprises, Lviv region, 1990 - 2003

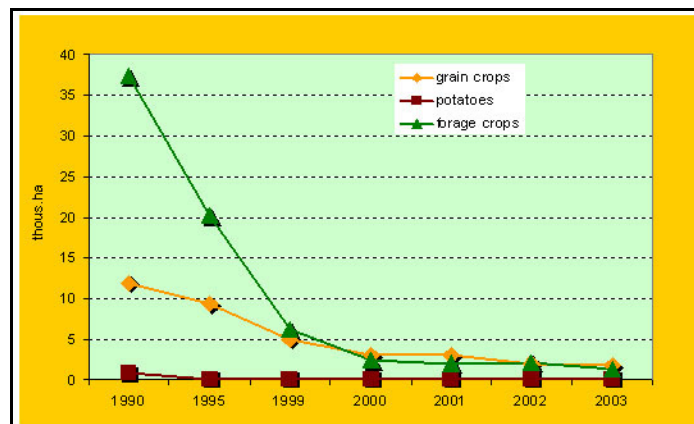
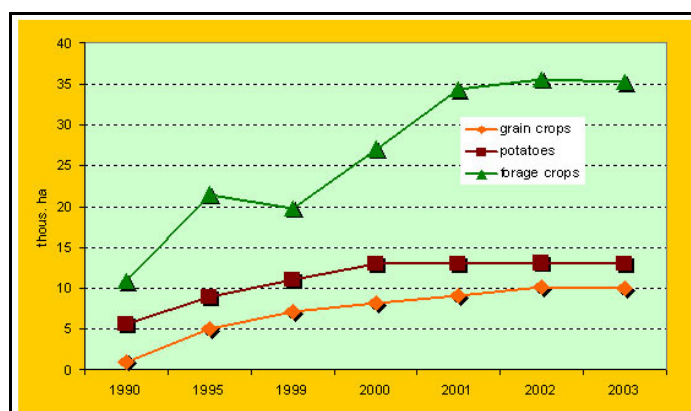


Figure 10: Dynamics of crop area in the individual farms, Lviv region, 1990 - 2003



From 1990 to 2004, there was a drastic fall of fertilizer application in crop enterprises. Thus, the application of chemical fertilizers by agricultural producers in the Transcarpathian region made 286 NPK kg ha⁻¹ in 1990 and only 43 NPK kg ha⁻¹ in 2004. The portion of chemically fertilized area fell from 80% to 46.6%. Application of organic fertilizers also fell from 12.3 to 1.0 tons/ha while the portion of organically fertilized area reduced from 28% to 4.5%. A similar picture was found in the Ivano-Frankivsk region: application of chemical fertilizers fell from 240 to 30 NPK kg ha⁻¹ and from 97.5 to 40.8 tons/ha in organic fertilizers. In 1990, the application of chemical fertilizers in mountain areas of the Ivano-Frankivsk region fluctuated from 10 (Kosiv) to 70 NPK kg ha⁻¹ (Dolyna district) and the portion of fertilized area from 27%-74%. In Lviv region, 142 NPK kg ha⁻¹ and 5.7 tons/hectare were applied in 1990. In 2004, this was reduced to 36.0 NPK kg ha⁻¹ and 1.9 tons/hectare respectively. The portion of fertilized area also fell respectively from 88% to 28% (for chemical fertilizers) and from 44% to 5% (organic fertilizers). In 2004 in the Putyla districts of the Chernivtsi region, they completely ceased application of both chemical and organic fertilizers (in 1990 it was 152.0 NPK kg ha⁻¹ of chemical and 52.6 tons/ha of organic fertilizers, with the portion of fertilized area being 96% and 24% respectively). Therefore, the overall decrease in application of both chemical and organic fertilizers by agricultural producers has decreased soil fertility. Official statistics lack data on fertilizer application by household farms which have traditionally used self-produced organic fertilizers to improve soil fertility.

In the entire Ukraine and, particularly, in the Ukrainian Carpathians, ecological (organic) farming does not exist. There is a need to design and pass appropriate legislative documents, run certification of arable land, hay land, pastures and agricultural animals. Due to a relatively low level of heavy metals and pollutants accumulated in the soils of some remote districts of the Ukrainian Carpathians, it is quite certain that organic farming has prospects for development in this region. On the other hand, clarification is still required regarding the residual content of pesticides and herbicides in soil as well as accumulation of chemicals by plants.

Animal production

Animal production is considered a traditional agricultural enterprise in the mountains. The Ukrainian part of Eastern Carpathians is not an exception to this rule: pasture-oriented exploitation of this territory started in the XI-XII centuries already when post-forest mountain meadows, so-called "polonyna", came to exist.

According to official data of 1990, farm businesses in mountain districts of Ivavo-Frankivsk and Lviv regions have the following number of livestock: cattle – 327.5 (including cows – 141.6), pigs – 99.9, sheep and goats – 56.1 thousand head. As of 2004, total number of cattle (including household farms and other farm categories) in this region was 218.0 (138.6 cows), 105.2 pigs, and 35.1 thousand sheep and goats. During that period the number of pigs rose by 60%. The number of cattle and sheep/goats fell by 33% and 65%, respectively. The most drastic fall of the number of goats and sheep was in Kosiv district (from 13.3 to 4.44 thousand). The ratio of total cattle vs. cows changed: it was 2.3 in 1990 and only 1.6 in 2004, implying a decline in the number of bull calves fattened for beef.

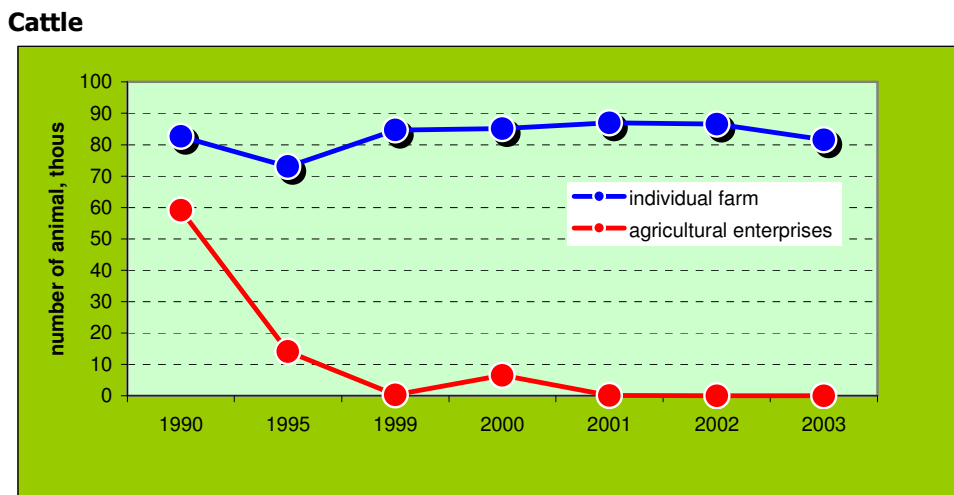
In 2004, there were a total of 306.2 thousand cattle (202.4 thousand cows), 189.8 thousand pigs and 112.4 thousand sheep and goats on private farms and household farms in the Ukrainian part of the Carpathians. Looking at the historical changes of these totals in mountain districts of Ivano-Frankivsk and Lviv, a plausible conclusion is that there was a reduction in the total number of animals from 1990 - 2004 due to the reduced numbers of cattle as well as sheep and goats. The ratio of total cattle vs. cows (1.5) also showed decreased fattening of bull calves.

For the whole mountain area, there is no relevant data on the number of animals in the households, although traditionally they have always been involved in animal husbandry. The present report reviews materials only pertaining to three mountain districts in Lviv region, which can represent the general tendencies (Fig. 11). In 1990 - 2003, the average daily growth (weight gain) in animal fattening on private farms in the Ivano-Frankivsk region decreased from 450 to 321 grams for cattle and increased from 350 to 442 grams for pigs. The pattern of average daily weight gains on private farms in Lviv region (in 1995 - 2003) shows gains for cattle (from 119 (194) to 255 (389) grams) and for pigs from 65 (79) to 157 (167) grams/day.

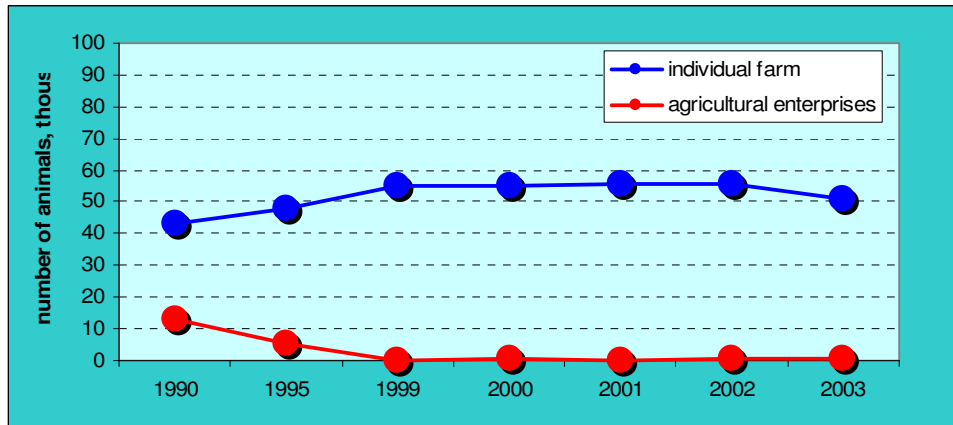
In 1990, the number of animals on private and household farms were as follows: cattle – 141.8 (including 56.3 cows), pigs – 24.4, sheep and goats – 9.2 thousand. Of these totals, 58% of cattle (including 77% of cows), 87% of pigs and 35% of sheep and goats were held by these farms. As of 2004, the number of animals on private and household farms were as follows: cattle – 84.5 (including 51.0 cows), pigs – 27.8, sheep and goats – 3.7 thousand. Of these totals, private and household farms held 100% of cattle, 98% of pigs, and 100% of sheep and goats. Thus from 1990-2004 there was a persistent “Ukrainian-Carpathian” trend of falling numbers of cattle (by 40%) as well as sheep and goats (by 60%) and an increasing number of pigs (by 12%). The ratio of total cattle head vs. cows was 2.5 in 1990 while in 2004 it fell to 1.7.

Average weight per one cattle head marketed to meat processors by farms in 1990 were between 345 to 427 kg for private farm businesses and 308 to 432 kg for household farms. In 2003, these indices were 293-356 kg and 330-354 kg respectively, that is, there is a trend of falling weight of fattened animals. The same tendency can be observed in case of cows. At the same time, in 1990 - 2003, the increase of average weight per one sheep and goat head can be observed.

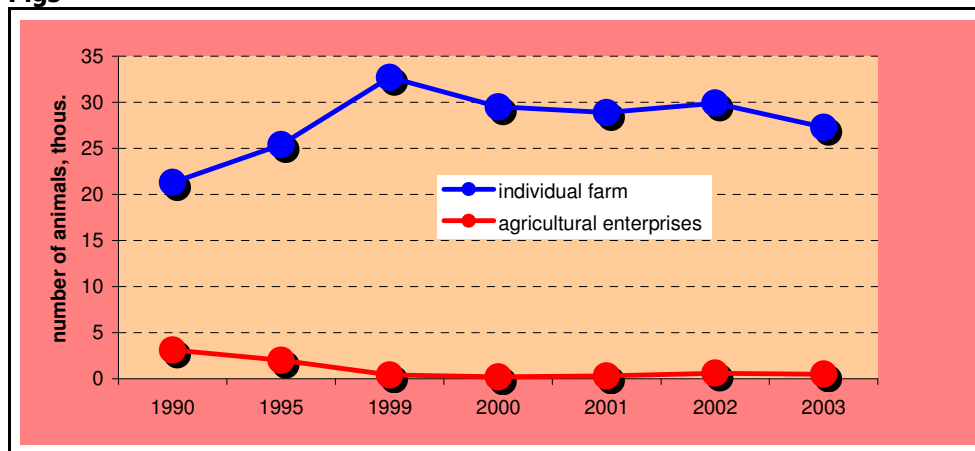
Figure 11: Number of livestock in agricultural enterprises and individual farms, Lviv region, 1990 - 2003



Cows



Pigs



In 1990, the average annual yield of milk per cow on private farms in the region was 2,940 kg and fell to 2,265 kg in 2003. The most drastic fall of milk yield occurred in the Transcarpathian region in 2000 which fell to as low as 300kg and 597 kg in the Volovets and Velykyi Bereznyi districts, respectively.

In 1990, the average annual shear from one sheep on private farms ranged from 2.2 to 2.6 kg; and from 2.3 to 3.0 kg on household farms. In 2003, these indices on private farms and household farms were 1.8-2.0 kg and 2.5-3.9 kg respectively.

Timber production

All forests in the Ukraine are owned by State. According to a departmental hierarchy structure, forest proprietors in Ukraine include the State Committee of Forest Management, Ministry of Agriculture (Regional Department of Agrolis, i.e. forests formerly owned by kolkhozes), Ministry of Defense; the remaining part of forest area belongs to Ministry of Transportation and Ministry of Ecology and Natural Resources (i.e. reserves, national parks).

The Ukrainian Carpathian forests were greatly damaged during the post-war period. The actual felling was 2-3 times larger than the recommended scientific standards. It is only in 1945 - 1957 that over 73 million m³ of timber was felled. Furthermore, over 500 thousand hectares of forests were damaged by wind in 1957 - 1960.

From 1991 to 2000, the felling reserves in the forests belonging to State forestry companies in the Carpathian region shrunk from 2,185.5 thousand m³ in 1991 to 1,839.7 thousand m³ in 2000. At the same time, the greatest reduction of estimated felling area was observed in Ivano-Frankivsk region: from 567,200 to 364,200 m³. During 1998 - 2000 the total felling reserves in the estimated felling area of the Carpathian region forests decreased by 143.3 m³ (from 1,983.0 to 1,839.700 m³).

According to the State Forest Fund of Ukraine, 57% of the estimated felling area was utilized in the Transcarpathian region in 1999, 73% in Ivano-Frankivsk, 91% in Chernivtsi and 84% in Lviv regions. Overall, logging outputs in the last 40 years (from 1960 to 2000) in the forests of state forestry enterprises on the territory of four regions: Transcarpathian, Ivano-Frankivsk, Lviv and Chernivtsi dropped 2.7, 5.6, 1.8 and 1.5 times respectively. During this period, across the entire Carpathian region, the volume of logging both for timber and forest management needs have dropped in 2.7 times, i.e. from 7,023,000 m³ in 1960 to 2,512,000 m³ in 2001.

In the early 1960s in the Carpathians, the timber actually logged was greater than the estimated felling area by 137%. The highest percentage of timber logged in excess of available felling area was observed in Lviv and Chernivtsi regions, 75% and 66% respectively.

It is difficult to collect statistics on the status of actual logging and estimated felling areas. Statistical directories in different regions require unification; they provide data about the most recent years only and make it impossible to come to historical indices.

In general, in 2003 the timber production output in the mountain part of the Ukrainian Carpathians due to all types of felling was 1,645,600 m³, including 548,000 m³ in Transcarpathian region; 664,800 m³ in Ivano-Frankivsk; 290,500 m³ in Lviv and 290,500 m³ in Chernivtsi.

According to the Department of Forest Management of the Transcarpathian region, the area of felling for commercial timber purposes in the forests of State Forest Fund was 885 ha in 2004. In addition to that, 5,456.8 ha were felled for forest management purposes (selective felling, sanitary felling, etc.). The total area where the timber was logged by clear-cutting in the mountain districts of the Transcarpathian region was 1,296.6 ha. Logging output (i.e. total timber volume) was 615.3 thousand m³ with the portion of marketable (liquid) timber approaching 90%. Most timber (178 thousand m³ including 142.5 thousand m³ of marketable wood) was logged in Rakhiv district. There are 12 permanent forest users (i.e. State Forest Management Offices) in the region. At the same time, in 2002 the list of temporary forest users included 38 commercial companies, the major part of them being in Rakhiv and Tyachiv districts, 12 and 13 companies respectively.

In Ivano-Frankivsk (mountain districts) the area of all types of felling by all types of users (State Forest Fund and other forest owners) was 12,252 hectares, including that for commercial timber 8%, forest management 89% and other purposes 3%. Logging output (i.e. total timber volume) was 693.7 thousand m³ with the portion of marketable (liquid) timber reaching 83%. Most liquid timber (over 100 thousand m³) was procured in Dolyna and Rozhniativ districts.

From 1988 – 1996, the reserves of timber in mountain forests of the Lviv region rose from 39.3 to 45.5 million m³ (this data pertains to the stock of State Forest Fund only). Average reserves of timber per ha also rose from 247.2 to 286.6 m³ and from 380.0 to 407.7 m³ in the forests over 80 years old. Hence, the average increment equalled 4.7 m³/ha.

In 1990, 609,600 m³ of timber was logged by felling for all purposes, while in 2003 this figure was 290,500 m³. From 1990 to 2000 forest regeneration activities were held at 11,582 ha (including 10,515 ha under forest plantation and 247 ha under protective plantations). In 2003, natural forest regeneration was observed on the area of 353 ha, while the forest regeneration program covered 1,049 ha. 1,190 genetic reserve items are under State protection, specialized nurseries are involved in breeding and selection. Total product value (works and services of forestry sector) was 33,767 thousand UAH (in Ukrainian currency) in 2003 (the same value was three times lower compared to 1998). The product output in forestry increased due to the greater importance of timber processing.

From 1998 - 2003, timber logging in Putyla district of Chernivtsi region grew from 138,600 to 142,600m³, while the value of forestry products rose from 6,266 to 10,375 thousand UAH. In 2003, natural forest regeneration was observed on 468 ha, while forest regeneration program covered 442 ha.

Despite the ban on export of round timber outside of the Ukraine, it still happens both legally (to finish contracts signed before the ban) and illegally (timber smuggling). Unauthorized felling is still a problem, particularly in the forests, which formerly belonged to kolkhozes. The possible reasons are low living standard, unemployment of population as well as an insufficient number of forest guards. In particular, 1,772 cases of unauthorized felling were discovered in the Transcarpathian region in 2001, resulting in 11,300 m³ of timber felled and 4,429.8 thousand UAH of estimated damage. At the same time, only 160 cases (9%) were forwarded to the authorities and eventually only 5 cases (3.1% of all cases with total felling of only 100 m³) ended up in courts.

This course of events is evidence of the poor work by law enforcement authorities in fighting unauthorized felling. The list of major problems of mountain forestry includes, but is not limited to, lack of an efficient forest guard system, procrastination by the State Committee of Forest Management in introducing compulsory labelling for all logged timber (this measure would help to detect the 'origin' of timber on the road) and absence of reliable information about the volume of unauthorized felling.

4. Economic performance of agricultural producers since 1990

Romania

The economic importance of the Carpathian mountains in Romania can be seen by the fact that the region is home to 30% of the cows, 28% of the sheep, 26.1% of the goats and 19,5% of bee families in Romania. Moreover, the ecologically friendly products of agricultural branches are well-known to be of a excellent quality.

It should be recognized, however, that agriculture in the mountain regions is practiced mainly (by more than 95% of farmers) on family farms with involvement of the family members and thus the productivity and income generated by such economic activities are very low.

Despite the decrease of the contribution of agriculture to GDP (from 14.4% in 1998 to 11.7% in 2003), an increase of the average income for the period 2001 - 2004 at the households' levels has been recorded (according to the "Diagnosis of the Rural Area" conducted by the MAFRD).

A proportion of the agricultural products produced by the family farms of the Carpathian region (mainly meat or milk products) are collected by different processing companies of the food industry. For instance, from the total milk production of an average family farm - 80% is kept for self consumption or sold on neighbouring markets as milk or milk products and 20% is delivered to different processing companies.

The average production of cattle has increased during the 2002 - 2003 period, but this is still under the EU standards and the animal density is still not high enough.

From 1998 - 2003, at the national macro-economic level, the following changes regarding the food industry have been recorded: meat production increased its contribution to the food industry from 15.6 % to 18.1% and milk production from 4.2% to 7.1%.

An evolution is recorded in the ecological agriculture field. In some parts of the Romanian Carpathians, the farmers have certified the grasslands and the milk production process (on 40,000 ha) and they deliver the milk to different processing companies for the production of "bio" products.

A special case for the mountain region is potato cultivation. The potatoes are cultivated on almost 100,000 ha, with an average yield of 17,000 – 20,000 kg/ha, which is consumed mainly in the domestic market. The potatoes could generate profit or losses, depending if the culture is hit by manna or not.

Also other products such as fruits or vegetables are kept for self consumption and small quantities are sold in domestic markets.

In addition, over 4,000 agro-tourism pensions with a capacity of over 20,000 beds, which are rented for 45-55 days/year are situated in the Carpathian Mountains with a total income of over 25 million EUR/year.

Slovakia

Neither systematic, nor economic measures can guarantee a profitable agriculture in the mountain regions. State subsidies are essential for development of agriculture in the mountain regions as well as for maintenance of non-productive functions of grasslands.

In 2001, the average value of subsidies was 74.5 Euro/ha in Slovakia and 91.86 Euro/ha in its mountain regions.

Economic restructuring and lack of capital caused a sudden drop in agricultural investment in the 1990's, resulting in a lowering of fertilizer consumption, number of livestock, and agricultural production. Since 1995, moderate production expansion has been recorded mainly due to the subsidies and lower expenses.

Table 21: Proportion of subsidies in 2001 in Slovakia

	% of total subsidies in Slovakia	% of total subsidies in mountain regions
Less favourable areas	43.9	5.63
Crop production	23.3	8.14
Animal production	18.4	6.70
Investments	6.89	5.32
Insurance of losses	3.49	74.21

Source: Mihina et al., 2002

Table 22: Economic parameters in mountain regions calculated per ha of agricultural land

Economic parameter	Year						Index 2000/1990
	1990	1991	1993	1995	1997	2000	
Revenues	26 300	12 433	16 196	18 322	19 727	20 800	79.1
Expenses	25 041	19 762	17 238	18 960	20 668	21 030	83.9
Economic result before taxing	1 503	-7 037	-1 041	-639	-941	-233	-
Revenues from sales and services	18 884	12 007	8 735	9 837	10 697	11 045	58.5
Production	17 283	11 591	9 163	11 556	12 115	12 678	73.4
Production consumption	13 157	10226	6 589	8 182	9 405	10 135	77.0
Added value	4 305	1 670	2 782	3 618	2 898	2 706	62.9
Subsidies	7 880	-	3 531	3 875	3 990	4 694	59.6
Subsidies including investment	8 247	-	3 823	4 093	4 470	5 170	62.7
Number of employees per 100 ha	13.72	9.68	6.52	5.87	5.05	3.76	27.4

Source: Ministry of Agriculture of the Slovak Republic, Research Institute for Economy of Agriculture

Ukraine

Agricultural enterprises

Two types of agriculture production systems can be found in the Ukraine: agricultural enterprises of different forms of organization and private enterprises (farms and households). The reorganization of the agricultural sector of the economy from public property form (collective farms and state farms) to private-rent and private property forms was accompanied with a relatively rapid setback in production and economic efficiency of agricultural enterprises. For example, in most of the districts of Ivano-Frankivsk region, Lviv region and Chernivtsi region, the average economic efficiency for all branches of agricultural production⁵ was +5.7 (Skole), (a ratio driven from profit to net cost of sold production in percentage) +41.3% (Bogorodchany) in 1990, but in the following years the economic efficiency was decreasing considerably. By 1995, economic efficiency was decreasing considerably with expenditures for agricultural production exceeded the gain (Table 23).

Similar dynamics were also observed during the subsequent years. The figures of economic efficiency decreased to the record-low values of -65,0% (Velykyi Berezhnyi) and -69,6% (Skole) in 2003. The animal breeding branch was the most unprofitable. The rapid decrease of the economic efficiency was caused by changes in the forms of land property (land privatization) and the means for agricultural production as well as rise of prices for fuel, chemical fertilizers, new agricultural machinery and component parts, means for plant protection, seeding and planting stock.

⁵ The economic efficiency is the main indicator, which represents the effectiveness of utilization of work and natural resources of a territory. It is a ratio driven from profit to net cost of sold production in percentage.

Table 23: Dynamics of economic efficiency of agricultural enterprises

Administrative units	Level of economic efficiency, %			
	1990	1995	2000	2003
Transcarpathian				
Velykyi Bereznyi	-	-	-28,3	-65,0
Volovets	-	-	-27,3	-35,9
Mizhgirya	-	-	-8,3	-30,3
Rakhiv	-	-	-10,2	21,5
Tyachiv	-	-	-33,2	-33,1
Ivano-Frankivsk				
Bogorodchany	41,3	27,2	24,2	-1,3
Verkhovyna	14,2	-10,5	0,3	0,9
Dolyna	28,1	33,3	30,8	3,5
Kosiv	26,0	-9,1	27,7	n.d.
Nadvirna	14,8	-5,5	2,7	n.d.
Rozhnaytiv	26,4	2,3	20,1	1,3
Lviv				
Skole	5,7	-17,9	-69,6	n.d.
Staryi Sambir	23,5	-4,5	5,2	10,7
Turka	28,7	-2,2	n.d.	n.d.

The analysis of the economic efficiency of main economic branches shows the high instability of the agriculture production. For example, the economic efficiency of grain-crops cultivation in the Lviv region fluctuates between -8.5% and +16.4%, which is the positive tendency. But in Chernivtsi region, the economic efficiency of the grain-crops cultivation is positive; however it decreases constantly (Table 24).

Table 24: Economic efficiency of main types of agriculture products

Administrative units	Level of economic efficiency, %		
	1995	2000	2003
Lviv			
Grain crops	-8,5	13,2	16,4
Potatoes	-27,2	-16,9	-33,7
Milk	-47,2	-12,7	-18,6
Meat (cattle)	-64,5	-51,4	-51,2
Meat (pigs)	-63,8	-56,9	-38,1
Meat (sheep)	-85,7	-70,6	-71,7
Meat (chicken)	-34,5	-37,4	-51,8
Eggs	-15,9	0,3	19,8
Sheep's wool	-77,3	-100,0	-76,4
Chernivtsi			
Grain crops	124,5	54,2	16,8
Potatoes	46,1	36,9	30,6
Milk	-17,6	-1,2	26,6
Meat (cattle)	-8,6	-38,3	-38,7
Meat (pigs)	-16,1	-54,8	-50,6
Meat (sheep)	6,5	-30,0	-44,1
Meat (chicken)	-11,3	-55,1	-71,5
Eggs	21,1	-57,7	28,1
Sheep's wool	-53,8	-65,9	-73,9

In our opinion, practically all branches of the animal breeding are unprofitable. An especially dangerous situation could be observed in the meat farming sector characterized by technological imperfectness, decrease of reproduction potential of meat cattle to a critical level and decrease of price competitiveness during the last 10 years. The internal prices for meat have become close to the world prices which restricts the export capacity of the producers. Positive dynamics of the economic efficiency of milk production exists only in Chernivtsi region. Nowadays, the only profitable branch of the animal breeding is egg production.

Farms

Farms are a new subject of agricultural relations in Ukraine. The development of farms was established by the Verkhovna Rada of Ukraine with the adoption of 'The Law on Farms' in 1991. Farms in the Ukraine are family associations of villages engaged in the cultivation of crops, production of animal products and processing of products. In connection with this, the financial results of the enterprise activities are not very uniform. The economic efficiency value and production expenditures of farms on the example of mountain districts of Lviv region can be found in Annex 3, Tables 25 and 26.

By the results of the analysis of economic efficiency of farms, it should be stated that the profitability of the crop production in the mountain conditions is low (+14%), even when applying the chemical fertilizers and purchasing the seed. The animal breeding can be profitable enough under the conditions of cattle growing with using of purchased fodder, and using hay-lands and pastures intensively (overgrassing and fertilizing).

Animal breeding

The animal breeding typically practiced in the Ukrainian Carpathians is subsistence in nature; small in scale and with low yields. **The animal breeding is not market-oriented and does not create financial resources for increasing investment and improving** work efficiency. The animal breeding is labour-intensive, but at the same time, it can not support the reproduction of manpower, it poses obstacles for professional development, finding alternative sources of income, hinders the rise of the product demand. Taking into account the fact that milk, dairy products and potato form the basis of the rural people's diet, the analysis of modern development of the animal husbandry and its perspectives depends on the development of dairy farming.

Nutritional standards recommend a per capita milk consumption of 360 kg per year. But the standard is developed for the case of rational balanced ration. For example, if there is lack of proteins the milk consumption must be increased. In our opinion, the real amount of annual consumption of milk and dairy products would be 500 kg per capita. Taking into account the above mentioned, the real indicator of amount of potential market resources of milk is 3,200 centner (2,236 x 144 kg). The level of production is still not high enough for investments to be made in this sector. The market resources can be enlarged by increasing the cattle stock or raising the milk yield per cow.

The local population encounters a difficulty in the supply of meat for consumption. Raised livestock are typically sold to suppliers, since it is an important source of income for families. Meat for the local population consumption is supplied by swine-breeding and poultry farming. The forage resources for the swine-breeding and poultry farming are, however, limited

Production of main types of animal products in the households is unprofitable. Unprofitable production is connected with purchase price policy of milk, beef and pork (one should mention that the population of studied villages does not sell much pork and thus the estimation of the economic efficiency is conditional). Small wholesale agents and purchase enterprises undercut the purchase prices considerably compared to the retail prices. But the main reason of the unprofitability of animal husbandry is its low productivity and inefficient utilization of labour, particularly for cattle grazing. The unprofitability of the animal production is a limiting factor for the development of cooperation and organization of the processing of the animal products in the villages. In connection with an absence of big animal farms, the process of conserving the production structure of animal breeding at the household level has occurred, and even a partial improvement of the structure in current conditions can not make the production of animal products profitable.

5. Biodiversity of farmland and forestland

Romania

The grasslands are still rather well-represented in the vegetation of Romania and especially in the Carpathian Mountains: dry grasslands, mesophilic grasslands, high-mountain grasslands and wet grasslands. They form a significant group of habitat types with an inestimable value for the diversity of plants and other organisms.

The main zones of natural and semi-natural vegetation in the Carpathian Mountains are correlated with the altitudinal units: nemorose level, boreal level, sub-alpine and alpine levels.

The nemorose zone is the most significant one and extends through the whole Carpathian mountain area. The boreal zone is located especially in the Oriental Carpathian and the sub alpine and alpine zones - covering less important areas in the upper part of the Carpathian Mountains over 1600-1850 m high.

The alpine and sub-alpine flora includes many alpine-carpathian-balkanian species (30%) as well as circumpolar ones (22%). The Carpathian and Carpathian-Balkanian species (17% and respectively 10%) are also well represented. The majority of the Romanian alpine grasslands remain very close to a natural state and exhibit a high biodiversity that includes many endemic species.

The upper parts of the Carpathian's high mountains are covered by short grass pastures dominated by cyperaceous (*Carex curvula*, *Juncus trifidus*), graminaceous (*Festuca airoides*) and dicotyledonous (*Silene acaulis*, *Minuartia sedoides* etc.) plants, in association with short shrubs vegetation, composed by species of *Salix*, *Loiseleuria* etc. From the phytocenologic point of view, these areas are populated by vegetative associations belonging to *Juncetea trifidi*, *Salicetea herbacea* and *Seslerietea albicantis* classes. The subalpine grasslands are often accompanied by shrub and open woodlands. Their structure includes both phytocoenological units from the previous alpine classes and also many belonging to *Betulo-Adenostyletea* and *Molinio-Arrhenatheretea*.

There are no specific estimations for the Carpathians, but from the estimated number of Romanian flora (species and subspecies of higher plants, more than 4,000) at the national level, a significant proportion (approximately 60%) is growing on grassland – mainly on alpine and sub-alpine grasslands, mountain pastures and meadows.

The majority of Romanian endemic, quasi-endemic and threatened plants species (more than 90%) can be found on different types of Romanian grasslands. More than 66% of the globally threatened plants species (IUCN Red List, Habitats Directive - Annex IIb, IVb) still present in Romania are growing on grasslands.

Regarding the available data existing on grasslands in the Carpathian Mountains, it must be mentioned that the scientific research on Romanian flora and vegetation began in the 19th century. The Romanian Flora data refer mainly to the period 1952 - 1976 and many vegetation maps with different degrees of resolution were elaborated (the newest in 1985).

The existing data concerning the description and distribution of Romanian grasslands is 15-20 years old, fragmentary and mainly based on the Braun-Blanquet approach. It needs to be updated, in accordance with the European standards concerning the vegetation unit classification system and species taxonomy (Flora Europaea).

These aspects were taken into account in the framework of a project developed by the University of Bucharest and Royal Dutch Society for Nature Conservation – "National Grassland Inventory 2000-2003". The project was funded by the Programme International Nature Management/MATRA of the Dutch Ministries of Agriculture, Nature and Food Quality and Foreign Affairs.

A final report was published in 2004 – “GRASSLANDS OF ROMANIA, Final Report on National Grasslands Inventory 2000 - 2003”. From this report, the following grassland habitat types were identified:

Dry grassland

- Pale fescue grasslands on shinnly limestone from hill-mountain belts
- Dealpinae mountain calcareous *Sesleria rigida* grasslands

Mesophilous grassland

- Hill mountain mesophilous meadows
- Hill mountain mesophilous manured meadows
- Mountain mesophilous manured meadows
- Mesophilous oligotrophic mountain pastures
- Mountain mesophilous tall herb meadows

High mountain grassland

- Sub-alpine mesotrophic pastures
- Sub-alpine oligotrophic pastures
- Basiphilous subalpine pastures
- Subalpine acidophilous tall herb meadows
- Subalpine calciphilous tall herb meadows
- Acidophilous alpine pastures
- Basiphilous alpine pastures

Wet grassland

- Poor fen acid meadows
- Continental base-rich fen meadows

Therefore, the Carpathian Mountains are famous for their natural forests comprising a rich biodiversity.

The Carpathian forests comprise deciduous forests (mainly beech) – 53 %, coniferous – 25 % (mainly spruce, and also fir and pine) and the remaining 22% are mixed forests. In the alpine areas, there are also important surfaces of transitional woodland-shrub with *Pinus mugo*/ *Juniperus communis* and *Pinus cembra*.

The Forest Research and Management Institute (ICAS) has described more than 300 forest types for the Romanian forest ecosystems, Natural forests represent more than 67% of a total forest area at national level and for the Carpathian Mountains the proportion is bigger. Artificial stands represent about 21% and the rest are semi-natural forests.

The main groups of forests ecosystem formations in Carpathian Mountains, the number of ecosystem types, their present status and territorial distribution are:

No.	Ecosystem formations	Nr. of Ecosystems Types	Present status	Territorial Distribution (Occurrence)
1	Boreal coniferous forest	41	Underived primary seminatural, partly natural	Uninterrupted main territory in the Eastern Carpathians and interrupted in the Middle Carpathians between 1,200 - 1,800 m
2	Mesophyllous broad-leaved forests	50	Underived primary semi- natural, partly natural	Uninterrupted territory in all the mountains and hills between 300 - 1,200 (1,400) m and partially in South and West of Romania

Forests are managed according to the Forest Management Plans and conform to Romanian classification; 52% of forests are classified as forests for protection.

The conservation of the natural genetic resources is also taken into account. For 28 species of forest trees, more than 60,000 ha are designated as seed sources (56% for broadleaves and 44% for resinous species).

In the Carpathian mountains, important areas of virgin and quasi-virgin forests (210 976 ha) are also found.

The most important of these virgin forests are recognized as natural protected areas as outlined in the table below:

No.	Name of the forest	Surface [ha]	Type of forest
1	Piatra Craiului	1932 + 1459	Spruce forest, Mixed beech and coniferous
2	Bucegi	1634 + 3748	Larch, spruce forests; mixed beech and fir forest
3	Izvoarele Nerei	6261	Beech forests
4	Domogled	2743	Black pine (<i>Pinus nigra</i> var. <i>bannatica</i>) forest; Beech forest on limestone
5	Rachiteanu Forest	1200	Montane beech forest
6	Slatioara	854	Mixed forest of beech, fir and spruce
7	Giumalau	314	Spruce forests
8	Retezat	13,000	Spruce forest; Mixed beech, fir and spruce forest, beech forest; pine forest
9	Calimani	-	Mixed forest of spruce and <i>Pinus cembra</i> , spruce forests
10	Polita cu Crini	370	Mixed spruce, larch, spruce, beech forest; Larch and spruce forests
11	Cozia	-	Beech forests; mixed beech- coniferous forest; <i>Q. sessiliflora</i> forest

The Romanian forests are also home to the following types of animals:

- **mammals:** 33 species (endangered 3 species; vulnerable 5 species; rare 13 species; protected by law 3 species) - among them there are large carnivores: brown bears/*Ursus arctos* – 6,200, wolves/*Canis lupus* - 4,000, lynx/*Lynx lynx*- 2000, which represents 35% of wolves, 50% of bears and 30% of lynx populations in Europe. Also the reintroduction of marmot (*Marmota*) was successfully implemented under the National Forest Authority and also started a project for beaver (*Castor fiber*) reintroduction;

- **birds:** >156 sp - among the most representative are: *Bubo bubo*, *Strix uralensis*, *Glaucidium passerinu*, *Aegolius funereus*, *Aquila crysaethos*, *Aquila pomarina*, *Ciconia nigra*, *Tetrao urogallus*, *Tetrao terix* and very rare *Falco peregrinus*;

- **reptiles:** *Vipera berus*, *Vipera ammodytes*, *Anguis fragilis*, *Lacerta vivipara*, *Lacerta agilis*, *Lacerta viridis*, *Natrix natrix*, *Testudo hermanni*, *Elaphe longissima*, *Coronella austrieca*;

- **amphibians:** *Salamandra salamandra*, *Triturus montandoni*, *Triturus alpestris*, *Triturus vulgaris*, *Triturus cristatus*, *Rana temporaria*, *Rana dalmatina*, *Bufo viridis*, *Bufo bufo*, *Bombina variegata*;

- **fish:** the most representative are *Salmo trutta fario*, *Thymallus thymallus* and very rare *Hucho hucho*.

For the forest ecosystems, ICAS has prepared a "Red list" of plants and animals, which is now in the process to be discussed with other institutions/organizations.

Regarding the main threats to biodiversity for farmlands and forestlands, the most important ones are:

1. Land abandonment

It represents one of the greatest threats to biodiversity, as scrubs take over the traditional pattern of biodiversity-rich mountain pastures. The problem can be a result of: lack of cattle for grazing, a lack of finance for investments and the weak economic position of the owners.

2. Overgrazing

When the carrying capacity of the grassland is overcome by the number of grazing animals, this not only reduces the richness of biodiversity but also leads to soil erosion especially on slopes.

3. Soil erosion

Soil erosion and landslides affect approximately seven million hectares each year coming from both natural and anthropogenic factors. Natural factors such as wind and soil erosion are often exacerbated by actions such as felling of forests and shelterbelts, poor agricultural practices such as ploughing down-slope, and compaction and crust formation due to machinery.

4. The possible risk of contamination with GMOs

Field trials of GMOs plants, such as soybean, potato, sugar beet and maize are allowed in Romania. Moreover, the Roundup Ready Soybean of Monsanto is allowed for commercialization.

As a relevant source of contamination in the Carpathian region, the Genetically Engineered *Bt* variety of potato could be cultivated in field trials. According to existing information, there are field trials with Genetically Engineered *Bt* variety of potato near Nemira Mountains (Targu Secuiesc town) at an altitude of 1,200 m.

5. Illegal logging of forests

Illegal logging of forests is **a major problem**, which has the greatest impact on forestry practices in mountain ecosystems. It is best described in the WWF Report "Illegal logging in Romania" prepared by WWF Danube Carpathian Programme (DCP), March, 2005. The WWF defines illegal logging and forest crime as harvesting, transporting, processing, buying or selling of timber in violation of national laws. It lies within wider forest-related crime that includes both large- and small-scale theft of timber, breaking of license agreements and tax laws, as well as issues of access to and rights over forest resources, corruption, and poor management.

This issue is a very complex one. The WWF Report summarizes⁶, the most important aspects of illegal logging in Romania as being:

- **incorrect estimations** (underestimations) of wood volume and quality;
- illegal harvesting operations;
- **illegal wood transport** (misuse of transport documents, controlling personnel from police or financial guard with no knowledge on timber);
- **illegal exports**: misuse of export documents, wood volume difficult to be estimated by untrained custom or police personnel;
- **illegal logging from areas covered with forest, trees which are not included in the official statistics** (management plan database). No clear evidence and almost no controls exist for forests outside the officially registered national forest land.

Another aspect connected with the **unsustainable exploitation of forests** is the **selective extraction of economical (and ecologically) important trees, and introduction of non-native species** or non-autochthonous (Douglas fir and Austrian pine), which have negatively impacted biodiversity. It is generally accepted that these practices have reduced the quality of biodiversity on about 1,000,000 ha of land.

⁶ The WWF report provides an excellent overview of this complex problem.

Therefore, in many cases, forest exploitation also results in other indirect threats such as the creation of sawdust that is mainly deposited along riverbanks or in ad hoc dumpsites. Large deposits of sawdust produced along rivers and streams, together with soil erosion, drastically affect the aquatic habitat quality for many fish species through the reduction of oxygen content in the water and silting streambeds.

The inadequacy of private forestland management is also a very evident problem, with new owners seeking a quick return on their new forest assets. Until now, 17% of private forests were cut illegally. **The illegal cutting** from the private forests is connected mainly with: the appearance of companies, which are procuring and processing wood without complying to all legal requirements, and there are many such cases around the Carpathian region; exploitation by companies of the impoverished situation of the population; the theft of standing wood, which is very frequent.

The main causes of this phenomenon are mainly connected with the fact that the restitution of the forests was done without having in place a clear methodology and an efficient system of enforcement.

This can be seen with the adoption of a new Law on property and restitutions (Law no. 247/19.07.2005) without yet having operationally efficient methods to protect forests.

The new legislative framework provides for the restitution of over 70% of Romanian forests (including the forests having the special protection role, ones included in natural protected areas and even the primeval forests). Many specialists and NGO representatives are concerned about the effects of this measure, in the context of a weak institutional capacity for the enforcement of forestry regime and rules in the private forests.

This is combined with the illegal cutting of state forests and with overgrazing, which have degraded and fragmented forest and grassland habitats, leading to the loss of biodiversity and having also effects in the severe floods that affected the Romania last years.

At the present point in time, after the devastating floods which occurred in Romania in 2005, the Romanian authorities have become more aware about the role of the forests and they have ordered a more active enforcement of laws in the field of forest management.

6. Hunting

The management of wildlife and games species under the administration of the National Forestry Authority was very often a subject of debates between civil society organizations and administration, focused mainly on the accuracy of the data obtained on the evaluation of games species (especially for bears or chamois) and the methods used for hunting. The problem of poaching is also one that cannot be very well quantified. Nevertheless, there are evaluations that show a very big decrease in the populations (e.g. for chamois in Retezat and Rodnei Mountains National Parks/Biosphere Reserves) of wildlife with poaching being cited as the major reason.

Slovakia

The identified biodiversity of Slovakia includes 11,323 plant species, more than 26,700 animal species and 1,000 species of Protozoa. From the total number of plant species, 1,368 higher and lower plant species are protected, 197 higher and lower plant species are extinct. From the total number of animal species, 742 taxons are protected, 42 taxons are extinct.

The abundance and character of the grasslands is determined by natural conditions and agriculture management. The vegetation has been influenced by pasturing, mowing, manuring and fertilizing, sheep and cattle breeding. Grassland utilisation in national parks can be considered an appropriate way of environmental conservation. In many places, which are mowed and grazed regularly, a number of rare and threatened species can be found e.g. *Pinguicula vulgaris*, *Primula farinosa*, *Pedicularis palustris*, *Drosera rotundifolia*, *Dactylorhiza majalis*, *Oxycoccus palustris*, *Comarum palustre*. Conventional management of agricultural land is dangerous to many biotopes (wet meadows, herb wetland communities, mountain meadows), plant and animal species (Great Bastard – *Otis tarda*, Corncrake – *Crex crex*).

Since the 1940's, the development of agriculture has caused substantial damage to natural environments. Land abandonment, intensive grassland utilisation, use of hybrid seed mixtures, over-fertilisation, heavy mechanisation and power lines have led to habitat degradation and destruction. In these parts, secondary succession and development of plant communities with ruderal and undesirable (e.g. invasive) plants have been observed.

In 2001, only 300,000 ha out of 845,600 ha of grasslands were considered to have natural value. The rest were degraded.

The area of forests in Slovakia is 20,049 km². The forests in Slovakia are divided into three management categories: protective forests, forests with special functions, commercial forests. The proportion of protective forests is greater than the special and commercial forest categories. In forests with special functions, individual management is required in order to bring about conditions for which they are determined (e.g. nature protection). The major threats to forestland biodiversity are growing of monocultures, insects, diseases, wildfires, invasive species. Anthropogenic factors, like expanded infrastructure, tourism development in highly protected areas have negative effects on biodiversity, as well.

Of the total forest area, 40 - 45% is semi-natural forest, which originate from natural regeneration and in terms of species composition, differs only a little from natural forests. This is typical of Slovakia in contrast to almost all countries of Western and Central Europe. More than seventy fragments of natural and virgin forests with total area of 18,000 – 20,000 ha still exist in Slovakia (MoE SR, 1997).

Protected areas, by decree of law No. 543/2002 Coll. on nature and landscape protection, include buffer zones extend to approximately 1,220,000 ha and cover 23.15% of Slovakia, but only 200,000 ha of this total area are used for agriculture.

Protected areas are mainly situated in mountain regions with a high proportion of forest land. Forest land shares 89 % of the total land territory in National parks, 44% in buffer zones of National Parks, 71% of the total land territory in Protected Landscape Areas and 88% of the total land territory in small-size protected areas.

The effects that restrictions on conventional management have on agricultural and forest land in protected areas is financially reimbursed.

Slovakia's national list of proposed Sites of Community Interest (SCI) includes 382 sites, which cover 574,745 ha equalling 11.76 % of the total land territory. The coverage of Sites of Community Interest and protected areas by decree of law No. 543/2002 Coll. on nature and landscape protection, is approximately 86%. Restriction of management will be extended to 1.6% of Slovak territory.

The proposed Special Protection Areas (SPA) cover 1,236,545 ha which equals 25.2% of the total land territory. The covering of Special Protection Areas and protected areas by law No. 543/2002 Coll. on nature and landscape protection is appropriately 55%. Restriction of management will be extended to the following 11.3% of Slovak territory.

Ukraine

The flora of the Ukrainian Carpathians is diverse. 2012 vascular plant species have been found in the Ukrainian mountain regions. Besides this vegetation cover, 461 moss species and 882 lichen species are found. High-mountain plants (sub-alpine and alpine belts) counted in 883 species of flower and higher spore-bearing plants (42% of the Ukrainian Carpathian flora) play an important role in forming the species composition of the Ukrainian Carpathians.

In the mountain forests there are 70 tree species and 110 shrub species. The forest forming species are: oak (*Querceta roboris*, *Q .petraeae*), beech (*Fagetea sylvatica*), spruce (*Piccetae abietae*), fir (*Abietea*), sycamore (*Aceretea pseudoplatani*), birch (*Betuletea pendulae*), alder (*Alnetea glutinosae*, *A. incanae*), willow (*Salicetea*), cembra pine (*Pinetea cembrae*), and Scotch pine (*Pinetea sylvestris*).

The **oak forest** belt in the Ukrainian Carpathians lies between 150-580 m above sea level in the south-west (Transcarpathian region), but in the north-eastern region the upper boundary is at 300 m above sea level. The oak forests occupy 45,700 ha (4.2% of forested area) and consist of English oak and durmast oak. By now only some fragments of pure and mixed forests with durmast oak still exist near Bolekhiv and Nadvirna, in Rakhiv and Staryi Sambir District. During the land development the oak forest area decreased by 98%.

The **beech forest** belt in the Ukrainian Carpathians lies between 580-1,140 m above sea level in the south-western slopes, but in the north-east the range is 300-920 m above sea level. The beech forests occupy 419,900 ha (38.3% forested areas). During the land development, the beech forest area decreased by 60%. The beech forests spread almost on the whole territory except in the belt of pure spruce forests and the alpine belt. The beech forest consists of pure beech woods, hornbeam-beech and durmast oak-beech, sycamore-beech, fir-beech and fir-spruce-beech woods.

In the Carpathian Biosphere Reserve, there are 33,300 ha of virgin or close-to-virgin forests. In particular, the Uholka Reserve Massif has the largest area of virgin beech forests in Europe. There are 200-300 year old specimens of beech, which reach 40 m in height and 100 cm in diameter. Growing stock in the beech forests is 590-680 m³ per ha.

At present **spruce forests** cover more than 480,000 ha (47% of forested land). The spruce forest belt lies between 1,140-1,500 m above sea level in the south-western slope and 920-1,420 m above sea level in the north-east. Because of the exploitation of spruce forests during the last two centuries and cultivation of common spruce (*Picea excelsa*) in the beech, fir and oak wood-cutting areas, the boundaries of the species spread are changing considerably. During the period of land development, the area of pure spruce forests increased in 1.8 times.

The spruce formation in the Ukrainian Carpathians consists of the following six categories: pure spruce, cembra pine-spruce, beech-spruce, fir-spruce and beech-fir-spruce forests. Secondary spruce forests occupy about half of the area of the Carpathian spruce forests. In comparison with the natural spruce forests, the secondary ones have a simplified structure, high productivity in young age, and low resistance to windfalls, diseases and pests. Among the spruce forests, the most valuable are the cembra pine-spruce forests, of which about 3,000 ha are found in the Gorgany (Rozhnyativ District). Pure spruce forests of natural origin (higher than 1,200 m above sea level) occupy 130,000 ha and are located on parts of the slopes of the highest mountain massifs of the Ukrainian Carpathians. The forests are guarded in the territories of the Carpathian Biosphere Reserve, Carpathian Natural Park, Natural Reserve "Gorgany" and numerous forest reserves of state significance. According to V. Parpan's data, the area of spruce forests of older age groups, which conditionally can be distinguished as virgin or close-to-virgin forests, is 15,300 ha.

Fir forests hold a special place among the main forest species of the Ukrainian Carpathians. They do not make a separate belt, but occupy the third largest area (80,900 ha) after beech and spruce. Main plots of spreading the forests with fir are in Turka district, Staryi Sambir district, Mizhgirya district and Rakhiv district. The fir forests consist of the following three sub-formations: oak-beech-fir, beech-fir and spruce-beech-fir forests. The fir forests are highly-productive and form forest stands more resistant than the secondary spruce forests, but further cultivation of the fir forests is not favorable because of their vulnerability to timber decays and some other diseases and pests. During the land development, the area of fir forests decreased by 37%.

Soft temperate climate of the Ukrainian Carpathians is optimal for growing of **sycamore forests**. But the spreading of the forests (1,250-1,370 m above sea level) is non-uniform. The best growing conditions for the forests with sycamore are on the south-west slopes in the Zakarpatska Region, where it grows in belts of pre-mountain hornbeam-oak and ash-oak forests. Mixed sycamore forests are guarded in the Uzhansky Natural Park.

Formations of birch forests, black alder forests, speckled alder forests, willow forests, cembra pine forests and Scotch pine forests occupy relatively small areas in the Ukrainian Carpathians.

The variability level of the forest aggregations in the Ukrainian Carpathians decreased considerably due to the anthropogenic influences. This decrease in variability has revealed four categories of rare forest aggregations that are under the threat of disappearance and need preservation.

There are four categories of phytocenoses:

Category I: Phytocenoses of natural origin, in which the edificators and co-edificators are listed in the Red Book. They are composed of rare wild ancestors of cultivated plants and also other rare, endemic and relict species. The species also have low ability to reproduce and there their natural habitat is disappearing. Among the category I, there are spruce-cembra pine, fir-spruce-cembra pine and ash-oak forests, and 20 forest associations with speckled alder, sycamore, yew and lime.

Category II: The phytocenoses of natural origin composed of the same species as the I category but having satisfactory natural reproduction and stable natural habitat. There is a decrease of the area occupied by the associations connected with different forms of anthropogenic influence. Two formations with Scotch pine, sub-formations of spruce-pine, fir-spruce-pine and pine-fir-spruce forests, a group of associations of beech, spruce-beech and spruce-fir-beech forests with ramsons (*Allium ursinum*) belong to the II category.

Category III: The phytocenoses of natural origin composed of rare plants of low ecological and biological potential on the border of their natural habitat or altitude of spreading. Associations of azonal spreading or preserved in transformed massifs are also part of this category. Among the phytocenoses are durmast oak, black alder forests formation; of lime-oak, maple-lime-oak, durmast oak-beech, fir-durmast oak, fir-spruce, beech-spruce-fir, spruce-beech-fir forest sub-formation, and hornbeam-oak, hornbeam-lime-oak forests associations.

Category IV: This category includes phytocenosis, the edificators or components of which contribute to preservation of rarity fauna species. In this category there are two associations – the sphagnous spruce and durmast oak forest with privet. The major part of this rare forest phytocenoses is in Transcarpathian Region.

According to the approximate estimation, the area of natural alpine meadows ("polonyny") was 58,000 ha in 1980. Taking into account the fact that practically all high-mountains are guarded and belong to the nature reserve fund, the percentage of natural meadows in the Ukrainian Carpathians comprises approximately 3% of the analyzed area. During the land development period, the area of shrubs has also increased. The sub-alpine belt formed by *Pinus mugo*, *Juniperus sibirica* and *Duschekia viridis* is approximately 20,000 ha (approximately 1% of the territory). Due to the transformations of the forest compositions in the upper forest boundary, the percentage increased four times and equals approximately 75,000 ha. The official statistics consider the shrubs as forested lands.

Data was not available on areas of virgin or close-to-virgin forests in the analyzed territory. Therefore all forests older than 80 years were considered as virgin or close-to-virgin forests. The percentage of such forests in the Ukrainian Carpathians is 13%.

Thus in the composition of present vegetation cover of the Ukrainian Carpathians forested lands occupy 66% (including 6% of shrubs), meadows – about 17% (including 3% of natural alpine meadows). The areas of natural vegetation – forests, meadows and sub-alpine elfin woodlands are 161, 58 and 20 thousand ha respectively (8.5%, 3% and 1% of the analyzed territory, respectively).

Nature reserve territories in the Ukrainian Carpathians occupy an area of 381,182 ha or 20% of the analyzed territory. Among the 703 nature reserves, 60 have the status of state significance. They occupy 70% of the total area of the nature reserve fund. Among them there is one biosphere reserve (Carpathian BR, Zakarpatska Region), one natural reserve (Gorgany NR, Ivano-Frankivsk Region) and five national parks – Uzhansky NP and Synevyr NP (Zakarpatska Region), Carpathian NP and NP "Hutsulshchyna" (Ivano-Frankivsk Region) and NP "Skolivski Beskydy (Lviv Region). Among the administrative regions, the Zakarpatska Region has the highest percentage of reserve territories (23%), but among the smaller administrative units, Yaremcha Miska Rada has 23% (Carpathian NP), Kosiv District – 56% (NP "Hutsulshchyna") and Velykyi Berezny – 49% (Uzhansky NP). Most of the nature reserve territories of the

nature reserve fund of the Ukrainian Carpathians are under the jurisdiction of the Ministry of Ecology of the Ukraine and the State Committee of Forestry of Ukraine. Most of the objects of local significance are also subordinated to the structures of the State Committee of Forestry of Ukraine (Lisnytstvo – smallest unit of the committee). Information concerning the existence and areas of nature reserves in the territory of farmlands was not available.

127 vascular plant species of the Ukrainian Carpathians are listed in the Red Book. Among the administrative regions, the Transcarpathian region has the most with 111 species, the Ivano-Frankivsk Region has 96 species, the Lviv Region 42 species and the Chernivtsi Region 31 species. The plant species are guarded in the territories of the nature reserve fund. In general, from the territory of the Ukrainian Carpathians, 70 species of vascular plants; five species of large carnivores, two species of large herbivores, 26 species of small mammals; 22 species of birds, five species of reptiles, eight species of amphibians, 17 species of fishes and three species of lampreys are included into the Carpathian List of Endangered Species.

In the Ukraine, the study of biodiversity of species of rural vegetation has only recently begun. Such studies in the territory of the Ukrainian Carpathians were carried out in the framework of the Ukrainian-German Project "Transformational processes in the region of Upper Dnister River". The studies were carried out in two rural settlements of the Skole and Staryi Sambir districts of Lviv region and discovered 503 species of vascular plants. Most of the species are frequently found in the studied territory, but some of them have sporadic spread, and some are rare.

Among the adventive species making the expansion to natural cenoses are *Veronica filiformis*, *Heracleum sosnowskyi*, *Reynoutria japonica*, *Echinocystis lobata*, *Xanthium albinum* and others. Among the rare species, the following five species listed in the Red Book of Ukraine (1996) can be found: *Astrantia major*, *Arnica montana*, *Dactylorhiza majalis*, *Gimnadenia conopsea*, *Orchis mascula*. At the same time, a few more rare species of the Ukrainian flora are found, particularly, *Taraxacum palustre* (village Yalykuvate).

Spontaneous vegetation of the villages is represented by 14 classes. The most diffused ones are *Molinio-Arrhenatheretea*, *Chenopodietea*, *Plantaginetea*. The associations of the classes occupy large areas and are explained by the presence of typical growing places (haylands, pastures, roads, vegetable gardens, etc.). In the near channel zones of the rivers the associations of the class *Salicetea purpureae* are the most spread.

The species structure of the cultivated cenosis is represented by segetal species. A group of ruderal species associated with the syngenetic successions can be found on wastelands such as: pits, railroad and main road embankments, landfills, eroded lands.

The cultivated phytocenosis are represented with the species having economic significance: grain crops (4 species), cultivated crops (17 species), feed crops (15 crops), garden crops (19 species), fruits (12 species), medical plants (148 species), adornment plants (33 species), melliferous plants (243 species) and land-improvement plants (157 species).

6. Survey of rural development

Romania

According to the Law no. 347/2004 (Law of the Mountain Region), the Governmental Decision no. 949/2002 on the criteria for the delimitation of the mountain region and the Ministerial Order no. 328/2004 on the delimitation of the territorial units from the mountain region, the rural area of the mountain region in Romania consists of 656 comunas, which comprises 2,973 villages. Also 67 cities are found in the Carpathian region.

The "**communa**" is the basic administrative unit on which territory the rural policy is implemented. The communal authorities are the local partners of the judets (counties) and regional authorities for the attainment of the rural policy.

Article 5 of Law no. 2/1968 on the territorial administrative organization in Romania states that: "a communa is the territorial administrative unit comprising rural population united by common interests and traditions. A communa is composed by one or several villages, according to economic, social, cultural, geographic and demographic conditions. The organisation of the communa ensures the economic, social, cultural and administrative development of the rural localities."

At the upper level, the administrative units are the judets (counties). In Romania, there are 42 counties. Among them, there are 28 counties, which include territories in the mountain region.

The population of the mountain region is 2,850,738 people (including people, who live in the cities). Among them, there are 1,360,525 farmers and 769,114 owners of livestock and farmland.

The average population of a commune is 3,780 inhabitants, but there is a wide variance in the number of people living in each of these communes.

A commune consists of several **villages**. There is an average of 4.5 villages in each commune. Villages are characterised by a great diversity in terms of inhabitants' number. The size of villages in terms of their population varies from several inhabitants to more than 7,000- 9,000 inhabitants. The average number of inhabitants in villages is approximately 800.

Village composition in terms of the number of inhabitants, and comunas composition in terms of the number of villages and inhabitants, influences significantly the degree in which the population is provided with equipment and public services.

The communes with the small or dispersed population are in the most unfavourable position in regards to the supply of public utilities and have the most drastic decrease of population during the last decades.

The density of population in the Carpathian region is low. Its average level is below 40 inhabitants per km². Some mountain areas characterised by a low number of villages have population densities of less than 8 inhabitants per km².

The structure by gender of the rural territory is relatively balanced. Thus, the number of women (50.4%) is almost equal to the number of men (49.6%).

The age structure of the rural population is not homogeneous. The process of demographic ageing is obvious. The average age of the rural population is high (approximately 38 years) and is increasing at a steady rate. The ageing process appeared as a result of massive migration in the last three decades, and it was accentuated in the last 8-9 years due to the declining of birth rate.

The share of rural population participating in economic activities was over 55% in 2003 but this is lower than the 69.2% in 1998. The average participation rate of Romania's population was 52.2%. The higher rural activity rate is the result of agriculture's position as the prevailing economic branch with a low technical endowment rate.

In rural areas, the active economic life begins early, with almost two-thirds of the population younger than 25 years old already active (as compared to only one-third in urban areas).

The low level of agriculture income and the absence of other non-agricultural activities do not stimulate young people to stay in rural areas, thus, the old people have to work on the fields by themselves. Thus, the labour market has large numbers of very young people but also a high number of old persons. The unemployment rate in the rural areas is 5%, twice lower than in the urban area - 9.6%.

The rural education level is lower than in urban areas. More than 51% of the rural population have a low level of education. And the proportion of people who have gone to any school is 3.3% in 2003.

According to the data provided by the NAMA/MAFRD, mountain regions have been experiencing a decrease in population since 1990, but the most significant change is related to the ageing of the population.

From the total of 979,781 families who live in the mountain region, 73,400 family heads are in the 25-30 age category; 90,520 family heads are in the 31-35 age category; 111,000 family heads are between 36-40 years of age; and the remaining 704,861 family heads are over 40 years, which represents 72% of the entire number of families.

In rural areas, agriculture is the predominant economic activity, employing 67.3% of the labour force in 2003 (compared to 73.3% in 1999). In other non-agricultural sectors such as industry or construction, increases in the number of employed workers have been recorded (from 13.1% in 1999 to 16.9% in 2003). Also, the proportion of the people involved in services has increased from 13.6% to 15.8% during the same time period.

From an economic point of view, the contribution of agriculture to the GDP slightly decreased (from 14.4% in 1998 to 11.7% in 2003).

The main negative characteristics of agriculture in mountain regions are the lower productivity and the lack of mechanisation and chemical inputs.

In the last years, non-agricultural economic activities such as tourism, trade, transport, small processing agricultural industry have been actively developing in rural areas.

Among the economic agents in rural areas involved in non-agricultural activities, the majority (94.5%) are very small enterprises (0-9 employees). Also, the small enterprises with no employees comprise 68% of all companies. The majority of companies are involved in trade - 48%.

According to the "Diagnosis of the rural area" conducted for the development of the Agro-Environment National Program in Romania, we can state the following:

- **number of houses constructed** in rural areas in 2003 **have increased**;
- **water and methane gas distribution network in rural areas is still very low**, but the networks have increased in the 2003 (27.5% - water system and 40.8% - gas);
- **sewage system in rural areas is very low** - 6.8%, comparing to 93.2% in urban areas;
- **geo-thermal energy is almost not used**, comprising 0.5% from the entire amount of thermal energy used at national level;
- **roads network have been modernized**. Some communal roads have become county roads, but the great majority of roads from the communes do not have access to national roads and are in very bad condition;
- regarding the health system, **a decrease in the number of doctors (-2.36%) and medical personnel (-15%)** was recorded from 1999 – 2003. In the meantime, the number of chemists has increased by 20.5%. Despite the fact that over 40% of Romania's population lives in rural areas, less than 15% of medical personnel work in rural regions. Also in recent years, a drop in the number of health institutions has taken place. In 2003, in rural areas, 87.5% of the hospitals, 18.2% of polyclinics, and 25.2% of dispensaries which existed in 1999 are still functioning.

- regarding the education system, from 1999 - 2003, the number of educational institutions decreased by 48.4% for pre-school institutions, 36.5% for primary school and gymnasium and 17.9% for industrial schools.
- regarding cultural development, a **slowdown in the activities of the cultural community** centres and libraries in rural areas is recorded. Despite the fact that the cultural community centres have their own buildings, resources available for their operations are totally unsatisfactory, meeting the needs of 82% of them. While there has been a general depreciation of the cultural tradition in rural areas, there are still many communities where the cultural traditions are very well preserved.

Slovakia

Estimation of rural settlements state

Despite the fact that 80% of the Slovak territory was covered by natural forest vegetation, there were suitable conditions for agricultural development. In the beginning of the 19th century, Slovakia was a typical agrarian country.

Development of agriculture started in the territory of Slovakia in the 4th century and was connected with coming of Slavonians. In the 9th century, almost the entire Slovak territory was settled, except the localities over the altitude of 400-500 m above sea level. Intensive settlements of mountain regions took place in the 14th century, during the period of Walachian colonisation. The number of villages increased to 3,000 and number of inhabitants grew from 400 – 450,000. In the 16th century, there lived approximately one million inhabitants in 3,589 settlements, of which 3,369 were villages. During the period of 1784 – 1850, the number of inhabitants increased from 1,948,968 to 2,308,411.

In the middle of the 19th century, the number of inhabitants grew by half a million. Such an increase in the number of inhabitants was a major factor influencing the growth in agricultural production. Farmers represented 90% of the working population. According to statistical data, 60.4% of the working population was engaged in agriculture in 1921. After 1945, 48.1% of the population worked in agriculture. Land in most of the mountain regions was managed. In 1948, there was 28,096 km² of agricultural land in Slovakia, which is 8,000 km² more than nowadays⁷. During the 1970's, 451,400 people worked in agriculture. The majority of rural population was working in agriculture. Specialisation of plant and animal production, intensification and mechanisation were typical features of that period. Environmental aspects were neglected, which resulted in environmental degradation.

Nowadays, the Slovak rural territory represents 87% of the total land area and the Slovak rural population (settlements under 5,000 people) represents 43.7% of the total population. A typical indicator for the demographic development is decreasing natural population growth and ageing of the population.

Table 27: Proportion of the urban population in Slovakia (%)

	1975	1999	2015
Urban population in Slovakia	42.4	50.3	55.2

The Slovak Western Carpathians consist of small regions scattered settlements and small farms, too. During the socialist era, some regions were partly under collectivisation. Some farms were abandoned or have been used for recreational purpose. It seems unlikely that farming will be restored in these parts of Slovakia.

Employment issues

Lower level of education and higher proportion of vulnerable groups is typical of the rural population. The majority of people living in the rural settlements are people with primary education or graduates from vocational schools.

⁷ Demo, *et all.* 2001.

Before 1989, **the majority of the rural population was engaged in agriculture**. After 1989, the economic transformation and restructuring processes led to an economic slowdown and job losses. Unfortunately, new jobs for the rural population have not been created in the process of an economic recovery.

The situation in the rural mountains regions is significantly worse compared to the urbanised regions. A rapid decrease in agricultural employment led to changes in the occupational structure. The proportion of people working in the service sector has increased in some regions. However, the share of workers from the rural regions engaged in the service sector was 79% of the total employed in Slovakia in 2003.

Economic, social and cultural development

During the transition period, the share of agriculture in gross domestic product decreased rapidly. From 1989 – 1991, the share of agriculture in gross domestic product decreased from 9.3 to 5.7 % and stabilised afterwards to 4 – 3.8 %.

Agriculture belongs to economic sectors with the lowest average monthly wage. People working in agriculture get low wages. Income from jobs outside agriculture often helped farmers to maintain their farming activity over the last decade.

The level of wages and employment rate essentially determine the standard of living of the group of productive population. Economic level of rural inhabitants determines also their unfavourable social status.

A considerable part of population living in villages in the mountain regions is lacking public infrastructure. Public water supply is missing in many mountain regions. Renewable energy sources are almost totally non-existent. Most inhabitants living in the mountain villages have little access to the telecommunication network. In the late 1990s, the situation was improved due to the build-up of the mobile phone network.

Cultural possibilities in the rural areas are still very rare in comparison with the urban areas.

Ukraine

In the mountain areas there are 774 settlements of which 79% of them have **mountain status**. Among them almost 95% are rural (731), but the percentage of urban villages and towns is 4% (31) and 1% (12) respectively. Therefore, the territory covered in the report can be considered rural. It is important to underline the fact that there is a lack of official statistics for rural territories.

The economists classify the **mountain regions in Ukraine as “depressive”**. Formal criteria for the classification are social and economic indicators (birth rate per 1,000 people, percentage of people working in agriculture, population density) as well as topographic and climatic indicators. Thus, particularly, the Law of Ukraine **“On the Status of Mountain Settlements in Ukraine” defines the basics of the state policy concerning the development of mountain settlements** and guarantees of social protection for citizens living, working or studying in the settlements. The main criteria of mountain settlements are: location of the whole or a part of a settlement, in which more than one third of the settlement citizens live, at an altitude 400 m above sea level; presence of less than 0.25 ha of arable land per capita (or less than 0.60 ha of agricultural land, if there is not arable land); inclement climate (cold and long winter with average duration more than 115 days; average temperature in January less than minus 4°C; cool summer with average duration less than two months, average daily temperature in July less than 20°C; average annual amount of precipitation more than 600mm; there are mudslides, floods, windfalls).

According to the law, some State guarantees on allocation of budgetary funds for the infrastructure development and improvement of living conditions are provided. But the possibility of receiving pensions and scholarships 20% greater than those of lowland territories is the most attractive for the citizens. This led to parts of the population attempting to become registered (get formal permanent residence permit) in these districts. In the opinion of Ukrainian scientists, the law gave the opportunity for the citizens of mountain regions to get much money from the budget, but has not solved the problem of the depressive state of the territories.

By the percentage of rural population, the mountain districts of the Ukrainian Carpathians can be divided conditionally into three groups. The first group includes six districts with the percentage of rural population higher than 80% of total population (Putyla, Turka, Kosiv, Verhovyna, Bogorodchany and Mizhgyrya districts). Nine districts, in which the rural population percentage is in the range 60-75% (Stary Sambir, Scole, Rozhnyativ, Nadvirna, Dolyna, Tyachiv, Rakhiv, Volovets and Velykyi Berezny districts) belong to the second group. The third group consists of Yaremche Miska Rada and Bolekhiv Miska Rada, in which the rural population is 45% and 50% respectively. For the whole territory, the percentage of rural population is 73%.

The population density for the analyzed territory is 56 persons per km². The highest population density is in Ivano-Frankivsk region (in the Kosiv district the figure goes up to 100 people/km²) and the lowest in the Putyla district of the Chernivtsi region. The Velykyi Berezny, Mizhgyrya, Verkhovyna and Skole districts and Yaremche Miska Rada are in the category of sparsely populated areas (the population density is less than 42 persons per km²) along with the Putyla district. It is important to note that there is a tendency of decreasing population in mountain villages. Thus, in the mountain districts of the Lviv region two villages have a population of 27 and 41 persons, respectively.

The analysis of the age structure of the population in two administrative mountain regions (Lviv Region and Chernivtsi Region) revealed that the percentage of able-bodied citizens (women from 16 to 54 years, men from 16 to 59 years) was 54-55% in 2003. The percentages of male and female children were 22% and 26% respectively. The people of pensionable age (women over 55 years and men over 60 years) were 24% and 19%, respectively. Among the rural population of the Lviv region are 53% of able-bodied citizens, 25% of pensioners and 22% of children.

In the gender structure of the urban and rural population of the Ukrainian Carpathians, women prevail – 51.5% against 48.5% of men. The relation is also similar for rural populations: in the Lviv Region 50.7% are women and 49% are men.

In 2003, the birth-rate of rural population (per 1,000 persons) was in the range from 8.6 in the Velykyi Berezny district to 14.8 in the Putyla district. In general, the birth rates in the rural territories are higher than in the urban territories. The death-rate of rural population is high in the mountain districts. The death-rates are the highest (more than 15 per 1,000 people) in the Velykyi Berezny, Kosiv, Skole and Staryi Sambir districts. Only in the Tyachiv district the death-rate is less than 10. Because of the high death-rate, the natural increase of population is negative in 12 of the 17 analyzed districts. That means that the depopulation processes exist in the districts, in which the population increase was positive practically always before 1995.

Among the main causes of the death, circulatory system diseases, neoplasms, accidents, respiratory system diseases, traumas and poisoning prevail.

The analysis of dynamics of child mortality during 1990 – 2003 shows that the death rate is high in five districts of the Ivano-Frankivsk Region (more than 10 children died naturally by 1 year old per 1,000 newborn) and in the Turka district of Lviv region.

As was mentioned above, the mountain settlements are considered as depressive territories because of the low or decreasing employment rates in different economic areas. In the mountain districts, the employment rate is 68-73% of the able-bodied citizens. Compared to 2000, a general trend of rising employment rates exists.

The official unemployment rate in the mountain districts is considered as being high. In the beginning of 2004, it ranged from 3.5% to 14% . During 1996 - 2004, the unemployment rate was increasing rapidly until 2003 but in 2004 it started to decrease. It must be noted that the official unemployment rate does not reflect the real unemployment (the category of hidden unemployment is not taken into account).

Interregional and international migration balances for the population of the Ukrainian Carpathians were negative in 2003 (-1,708 and -426 persons, respectively). Nevertheless, the real migration rate, particularly, the international migration connected with search for employment in neighbouring countries

of the Western Europe and Russia is still unknown officially. From interviews of local citizens in some villages, the percentage of able-bodied citizens who are in 'searching for a job' ranges from 30-70%.

In the beginning of 2004, the number of pensioners in mountain regions was 279,759 persons or 26% of the total population. Among the administrative regions, the largest rate of pensioners was in Lviv region (30%) and the smallest in the Transcarpathian region (24%). Among the rural population, the percentage of pensioners is lower (19-22%). In Ukraine, five categories of pensioners are distinguished: by age, by invalidity, in case of lost bread-winner, for long service and social. Among them, the pensioners by age dominate. Thus, particularly, in the mountain districts of the Ivano-Frankivsk region, they make up 68% of the total number of pensioners. The other two largest groups of pensioners are 'by invalidity' and "case of lost bread-winner"; they contribute to 14% and 10% of the total number of pensioners, respectively.

The number of invalids per 1,000 people is in the range of 44 to 74. In some mountain districts, the total number of invalids increased by 20-35% during 2000-2004.

Taking into account difficult economic circumstances of the rural population and the continuous rise of prices of energy, such as gas and electricity, the State provides subsidies to compensate the expenditures. In 2003, the subsidies for liquefied gas and solid fuel amounted to 4,718,700,000 UAH and were given to 20,893 families (Zakarpatska region – 8,917; Ivano-Frankivsk region – 100,566; Chernivtsi region – 1,866). In mountain districts of Lviv region, 19% of people are subsidized and 0.5% receives welfare.

In the mountain settlements of the Ukrainian Carpathians, there are 2,669 physicians and 8,595 paramedical workers. From 1990 to 2004, the availability of physicians did not change and equals 25 physicians per 10,000 inhabitants. But the provision of paramedical personnel decreased from 87 to 81 per 10,000 inhabitants during the same period. Due to considerable decreases of budgetary financing for medicine and the deterioration of the material resources of the medical institutions, the number of hospital beds decreased from 9,851 to 6,835.

In mountain areas, in 2003 there were 707 libraries holding 6,435,000 books and 639 clubs (cultural centers) or a ration of 12 club places per 100 persons and 607 books per 100 persons. The deterioration of the books is high and new books are not supplied in practice.

One should note that there is a positive growth in the number of children rest camps. After a considerable period of stagnation in 2003, 284 camps functioned in the mountain districts (mostly in summer). In the camps 30,395 children improved their health.

7. Existing policies and strategies affecting directly or indirectly SARD in the mountain areas

Romania

Main programs, laws and policies on agriculture and sustainable rural development in Romania

The main policies, strategies and laws, which regulate **sustainable agriculture and rural development in the mountain areas** in Romania, are:

1. **"The National Programme for Agriculture and Rural Development (NPARD), over the 2000-2006 period, under the EU Special Accession Program for Agriculture and Rural Development (SAPARD)"**, elaborated under the supervision of the Ministry of Agriculture and Rural Development and revised in 2003.

The NPARD was elaborated according to the Regulation (EC) 1268/1999 regarding the support for agricultural and rural development pre-accession measures in Romania during the pre-accession period. The NPARD contain the Measure No. 3.3 Agricultural Production Methods Designed to Protect the Environment and Maintain the Countryside, which has the following main objectives:

- According to the Commission Regulation laying down the financial rules for the application of Council Regulation No. 1268/99 on Community support pre-accession measures for agriculture and rural development in the applicant countries of Central and Eastern Europe in the pre-accession period and to the Article 22 of the Council Regulation (EC) No.1257/1999, the support offered in view of adopting the agricultural production methods designed to protect the environment and maintain the countryside (agri-environmental) will contribute to multiplying the actions of accomplishing the objectives of the Community policies regarding the agriculture and the environment;
- The development of the practical experience of implementation of agri-environmental measures, both at administrative and local level (respectively at the farm level), according to the principles of the CAP may help speed up the process of legislative harmonisation that Romania is undertaking, as well as the absorption of experience from the EU Member States.

2. **Sustainable Development Strategy of the Mountain Region** approved by the Governmental Decision No. 1779/2004 and the **Law of Mountain Region** No. 347/2004, are providing principles, objectives and measures of approaching sustainable development (mainly sustainable rural development) and biodiversity conservation of mountain regions. Also through the Governmental Decision No. 318/2003, the Inter-Ministerial Committee and the County Committees (in 28 counties) for the mountain region are established with the aim of integrating sustainable development and biodiversity conservation in all the activities developed in mountain regions. But the Strategy has stipulated only measures to be taken into consideration, but not an Action Plan with identified resources;

3. **National Agro-Environment Programme** developed in order to access the EU funds for the period 2007-2013 is now (2005) under preparation.

And the **main Laws**, which regulate the **sustainable agriculture sphere** are:

1. **Law no. 18/1991**-the Land Law, republished;
2. **Law no. 84/ 1996** for improving land reclamation;
3. **Decision of the Government no. 611/1997** for applying the Regulation of application of the Law no. 84/1996;
4. **Ordinance of the Government no. 81/1998** concerning afforestation of the degraded lands;
5. **Law no. 5/1982** regarding the protection of plants and of forests and the regime of pesticides;

6. **Order of the Minister of Agriculture and Food, no. 27/1995** concerning the financing modality for the actions of protection and phyto-sanitary quarantine;
7. **Decision of the Government no. 20/1995** regarding the regulation of the import of seeds and of planting horticultural material;
8. **Order of the Minister of Agriculture and Food, no. 33/1994** comprising the list of phyto-pathogenic agents, subject to the phyto-sanitary quarantine measures in Romania, completed with specific measures for biological agriculture;
9. **Order of the Minister of agriculture and food, no. 5/1995** concerning the list of quarantine organisms of Romania;
10. **Ordinance of Emergency of the Government No.34/2000** concerning ecological agro-food products;
11. **Governmental Emergency Order no. 34/2000**, approved by the Law no. 38/2001, which creates the legal basis for ecological agriculture activities in Romania;
12. **European Landscape Convention** (signed at Florence, on 20 October 2000) - **ratified by the** Law No. 451/2002.

In the policies and laws listed above, the following aspects are taken into consideration:

- **Integration of environmental concerns in land management plans**
Law of Mountain Region no. 347/2004 (Article 20) and Sustainable Development Strategy of the Mountain Region approved by the Governmental Decision no. 1779/2004.
- **Protection of natural and semi-natural grasslands**
Measure no. 3.3 Agricultural Production Methods Designed to Protect the Environment and Maintain the Countryside of the NPARD through a Specific Objective and Pilot Agro-environmental, Law of Mountain Region no. 347/2004 and the Sustainable Development Strategy of the Mountain Region.
- **Consideration of the impact of agricultural policies on ecological networks**
Stipulated as a measure in the Sustainable Development Strategy of the Mountain Region, and also included in the Agro-Environment Programme, now under elaboration, referring to the existing National Network of Protected Areas and at the European Ecological Network NATURA 2000, which will be developed in Romania.
- **Consideration of the impact of agricultural policies on mountain landscapes**
European Landscape Convention (signed in Florence, on the 20 October 2000) - ratified by the Law No. 451/2002
- **Consideration of the impact of agricultural policies on traditional land-use**
Measure of the Sustainable Development Strategy of the Mountain Region, Measure 3.3 and the National Agro-Environment Programme.
- **The aspects of need for the protection of mountain ecosystems and landscapes**, Importance of biological diversity and specific socio-economic conditions of mountains as less favoured areas are addressed by all policies enlisted above.

It should be mentioned, that these aspects are addressed mainly theoretically through the documents listed above, but in practice, only very limited activities through the Measure 3.3 of SAPARD have been already planned, and many measures must be taken through the Agro - Environment Programme, which will start after 2007-2013.

Laws and policies in the forestry sector

The **main strategies** in the field of forestry are the **Sustainable Development Strategy of the Romanian Silviculture** over the period 2000-2020 (MAPPM, 1999) and the **National Forestry Policy and Development Strategy** (NFPS) for Romania (2001-2010) (MAAP, 2001).

The **main laws, which regulate the forestry sector are:**

1. **Law no. 26 / 1996** - Forestry code
This law contains provisions concerning the management of national forest area and other areas covered by forest vegetation, the forest protection and the forest logging operations.
2. **Law no. 103 / 1996** - Hunting grounds and game protection law (modified)
The law contains general provisions concerning management of hunting grounds, game protection, hunting activities and legal sanctions for poaching operations. A new law on hunting is now under the elaboration.
3. **Minister Order no. 572 / 1991** - Regulations concerning terms, modalities and timing of forest logging and wood transport operations inside the national forest area
This Order specifies the legal aspect concerning the forest logging authorization, the transfer of areas to be felled and of felled surfaces, and other forest logging rules.
4. **Government Decision no. 971 / 1994** - Establishment and sanction of contravention concerning sportive fishing grounds and activities.
5. **Law No. 141 / 1999** – Law for approving the GO No. 96/1998 regarding forest regime and national forests administration and Law No. 120/2004 modifies GO 96/1998 regarding forest regime and national forests administration.
6. **EGO no. 226/2000** on the regime of juridical circulation of forest lands, approved by Law no. 66/2002.
7. **Law no. 289/2002** on the legal regime of forest curtains for protection.
8. **Law No. 18 / 1991** – Land restitution law modified by GO No. 1 / 1998; Law No. 54/1998; GO No. 102 / 2001; Law No. 545 / 2001 – establishes the legal basis for land and forest restitution, and regulates land use.
9. **Law No. 81/1993** for establishing compensations for the damages brought to the forests - includes the evaluation methodology to evaluate economical value of damages.
10. **Law No. 1 / 2000** – regarding restitution of agricultural and forest lands to the former owners according to Law No. 18/1991 and Law No. 169/1997 modified by: GO No. 2 / 2001; GO No. 102 / 2001.
11. **Law No. 400 / 2002** - regulates restitution of agricultural and forest land, establishing procedures to be followed, distinguishing the maximum surface to be given back, where, how it should be managed.
12. **Law No. 31 / 2000** – legal measures for forestry law offences.
13. **GD 1046 / 2000** – for organizing and operating the control of enforcing the forest regime at central and local level.
14. **MO No. 635 / 2002** for approval of the Norms regarding seasons, modalities and periods for wood harvesting in forests and other types of forest like vegetation.
15. **Law No. 160 / 2004** – which is modifying GD No. 105/2003 regarding reorganization of NFA Romsilva.
16. **GD 427/2004** regarding specific norms for timber transportation as well as monitoring and control of timber transportation and sawmills activity.
17. **GO No. 41 / 2004** – regarding establishment of the Territorial Directorates for Forestry Regime and Hunting.
18. **GD No. 85 / 2004** – to approve timber selling Rules by the owners of public forests.
19. **Law No. 31/2000** concerning illegal activities in forests and related penalties, law concerning the control of wood processing, transport and others, which refer to measures for enhancing the forest guard and forestry system control activities in order to avoid illegal logging.
20. Regulations for forests **guarding** system and prevention of illegal activities.
21. Technical norms for establishing and implementing forest treatments (types of cuttings).
22. Technical norms for evaluation of timber volume.
23. Technical norms for forest management planning.

In the policies and laws listed above, the following aspects are taken into consideration:

- **Sustainable management of forest resources and forests lands** is an approach used in all policies, laws, norms and regulations, but its efficient implementation into practice is still a challenge.
- **Protection of forests against pollution.** There is no regulation concerning this aspect.

- **Prevention and protection against fire, pests and diseases.** The aspect is addressed by the Strategies on forest and also by the Forestry Code. There are debates between forestry and biology experts if these measures to be applied or not in strictly protected areas.
- **Public information on forests ecosystems.**
- **Public participation in development, implementation and planning of national forest policies.** There are no provisions on the Strategies on forests, but there are general laws regarding the access to information and public participation (Law no. 544/2001 regarding access to the information of public interest and Law no. 86/2000 which has ratified the Aarhus Convention), which also covers forests. The information must be of public interest and not classified. But in practice, there are no efficient mechanisms for public information and participation, and only formal methods.
- **Recognition of vital role of forests in maintaining the ecological processes and balance.** The Forestry Code and the Strategies on forests assume the following aspects: afforestation and reforestation, protection of natural forest areas, protection of ecologically representative or unique types of forests, consideration of alternative uses of forests, ensuring the appropriate retention of precipitation in the mountains for flood prevention.

The National Forestry Policy and Development Strategy (NFPS) for Romania (2001 - 2010) contains all these aspects as strategic actions. More than this, regarding the protection of natural forest areas, the NFA administrates the majority of the National and Natural Parks from the Carpathians region, which includes forestlands, under a contract with the central public authority in this domain – MEWM.

None of the forestry policies or laws approaches the principle assessing the economic and non-economic values of forest goods and services. But indicators regarding biodiversity of Romanian forests were developed in 2002 by ICAS, and other developments on this issue are needed, possibly in connection with the forest certification program of the Forests Stewardship Council.

Aspects of environmental protection and biodiversity conservation

The aspects of environmental protection and biodiversity conservation are regulated by the following strategies:

- In 1996, the **first Strategy for the Environmental Protection** was elaborated and in 2000, a Medium-Term Strategy for the Environmental Protection (2001 - 2004) was issued. Both strategies stipulate that "complying with the provisions of international conventions and programs regarding environmental protection" represents an important criterion for setting up priorities in the environmental field. The Medium-Term Strategy provides a National Action Plan for Biodiversity that will be implemented in the period of 2001 - 2006.
- In 2001, the **National Strategy and Action Plan for Biological Diversity Conservation and Sustainable Use of its Components** were updated based on the previous ones, set up in 1996 with the support of the World Bank. The Strategy was developed under the supervision of the Ministry of Environment and Waters Management describing the elements and importance of Romanian biological diversity, suggesting that actions were needed to ensure that these natural values are protected for future generations and for the sustainable development in Romania.
- The **National Sustainable Development Strategy** was prepared in 1999 by a Working Group established by the Governmental Decision no. 305/1999, with the participation of civil society and the support of UNDP. The fundamental objective of the National Sustainable Development Strategy is "increased standard of living and prosperity for individuals and society as a whole at the national level; economic development within the sustainability limits determined by the natural capital in a way that should guarantee the quality of life for future generations". Following up a presidential initiative, an updated strategy is in the process of being prepared (called Initiative "Horizon 2025"), under the co-ordination of an Inter-Ministerial Committee for Sustainable Development.

- **Romanian Strategy for Environment 2004 – 2010** is focused on EU accession and has been developed in close collaboration between all relevant departments of the Ministry of Environment and Waters Management. Support was provided through the PHARE project "TA for the implementation of the PHARE 2001 Environment". The Strategy is based on a thorough assessment of all achievements and remaining gaps in all environmental sectors and on a review of all related environment accession documents. A number of discussions within the MEWM were organized for the elaboration of a strategy. The meeting with the EU representatives was organized to get additional clarifications and support. In addition, a meeting with other related Ministries provided further input in defining the Strategy.
- By the Regional **Environmental Reconstruction Program (REReP)** component 1.9 - "Strengthening the capacity of harmonization" with the environmental aquis communautaire, with its component "Updating the National Environmental Action Plan in Romania" co-ordinated and financed by GTZ Germany, a new version of the **National Environmental Action Plan (NEAP)** has been developed in 2003 and updated, according to the present requirements and policies for environmental protection associated with EU integration. The priority projects to be developed in the future have been selected by different thematic working groups in the NEAP.
- Under the MEWM, Directorate for Biodiversity Conservation and Bio-security has been elaborated in 1999 and updated in July 2000 the "**Approximation Strategy for the Nature Conservation Sector**".
- **National Development Plan (NDP)** - Romania was asked by the European Commission to draw up NDP for accessing the structural-type Pre-accession Funds (PHARE, ISPA and SAPARD), and, after integration, for accessing the Structural Instruments (structural and cohesion funds). The **NDP 2004 - 2006** was finalized and sent to the European Commission in December 2003. In the beginning of May 2004, the process of drawing up the **NDP 2007 – 2013** was started, the first development programming document that will underpin the Romania access to Structural and Cohesion Funds of European Union, after accession as an EU Member State.

The main laws on environmental protection and biodiversity conservation are:

1. Treaties, Conventions and International Agreements signed and transposed in Romanian legislation:

1. **Convention on Biological Diversity** (signed in Rio de Janeiro, 1994) - ratified by Law 58/1994;
2. **Convention on International Trade in Endangered Species of Wild Fauna and Flora** (CITES) (signed in Washington, D.C., on 3 March 1973, amended in Bonn, on 22 June 1979) - ratified by Law No. 69/1994;
3. **Convention on Wetlands of International Importance especially as Waterfowl Habitat** (signed in Ramsar, Iran, 2 February, 1971) - ratified by the Law No. 5/1991;
4. **Convention Concerning the Protection of the World Cultural and Natural Heritage** (adopted at UNESCO General Conference in Paris, on 16 November 1972) - accepted by Decree No. 187/1990;
5. **Convention on the Conservation of Wildlife and Natural Habitats** (signed in Bern, on 19th September 1979) - to which Romania adhered by Law No. 13/1993;
6. **Convention on the Conservation of Migratory Species of Wild Animals** (signed in Bonn, on 23 June 1979) - to which Romania adhered by the Law No. 13/1998;
7. **European Landscape Convention** (signed in Florence, on 20 October 2000) - ratified by Law No. 451/2002;
8. **Convention of the Protection and Use of Trans-boundary Watercourses and International Lakes** (signed in Helsinki, on 17 March 1992) - ratified by the Law No. 30/1995;
9. **Agreement on the conservation of African-Eurasian migratory water birds** (Hague, 1995), ratified by the Law 89/2000, aiming coordination of measures to maintain migratory waterfowls in a favourable conservation status or to restore them to such a status;
10. **Agreement on the conservation of bats in Europe** (London, 1991), accepted by the Law 90/2000, is the first international agreement devoted to the conservation of bats and the first of its kind under the Article IV of the Bonn Convention.

2. Internal laws:

1. Environmental Protection Law no. 137/1994 – it is the framework law on environmental protection.
2. Law no. 5/2000, on the approval of the national land use plan - Section III - protected areas. This law mentioned for the first time the Romanian protected areas (844, many of them in Carpathian Mountains).
3. The Habitat and Birds Directives were transposed into national legislation through the Governmental Emergency Ordinance no. 236/2000, which was approved, with amendments and additions, by Law no. 462/2001 – that is the Law of natural protected areas.

Several **documents of the subsequent legislation process** have been adopted to support the implementation of the framework laws, such as:

1. Governmental Decision no. 230/2003 on delimitation and establishing administrative structures for biosphere reserves, national parks and natural parks;
2. Ministerial Order no. 552/2003 regarding the approval of internal functional zonation for biosphere reserves, national parks and natural parks from the biodiversity conservation necessity point of view;
3. Ministerial Order no. 494/2005 on the procedure to award administration or custody of protected natural areas;
4. Governmental Decision no. 2151/2004 regarding the establishment of new natural protected areas. There have been 114 new natural protected areas established, of which almost a half are in the Carpathian Mountains;
5. Ministerial Order no. 671/2001 approving the procedure for harvesting, capturing, purchasing or trading plants or animals belonging to wild flora and fauna.

Strengths and weaknesses of SARD-M policies

Strengths	Weaknesses
A Law is in force for mountain regions and also the Sustainable Development Strategy of Mountain Regions (Most of the other Environmental Strategies are not empowered by law). These legal acts provide a general framework (principles, objectives and general measures) for approaching the sustainable rural development and biodiversity conservation of the mountain regions, in correlation with the Regulation 1257/99, including the measure concerning the less favoured areas and areas with environment restrictions.	The Sustainable Development Strategy of Mountain Regions stipulates only general measures to be taken into consideration, but not an Action Plan with identified resources. Also, there are no allocated relevant funds from the state budget for the implementation of this Strategy. Mainly, the funds, which will come after 2007 through the Agri-Environment Program and Less Favored Areas scheme are expected.
Romania adopted a very complex legislative framework, resulting mainly from the adoption of the EU legislation (regarding Organic Agriculture, Rural Development, Forestry, WFD, Nitrates Directive, Habitats and Birds Directives), which represents a good policy base. Romania has also adopted/ratified most of the Multilateral International Agreements on Environment.	The adoption of Aquis Communautaire in Romania was mainly implemented as a part of the adoption and inclusion into the Romanian legislation of the EU directives and regulations (regarding Organic Agriculture, Rural Development, Forestry, WFD, Nitrates Directive, Habitats and Birds Directives, etc.), but most of them are not implemented because of the lack of funding. The bureaucracy of the EU programs hampers the implementation process at the level of small farm owners.
The National Program for Agriculture and Rural Development, over the 2000-2006 period, under the SAPARD, provides a framework for the rural and sustainable agriculture development, through its different Measures, including the most relevant one - the Measure no. 3.3 - Agricultural	Regarding the SAPARD: there is a delay in the accrediting process – 6 measures accredited from 11; the rate of the committed funds is 97,09% and of the paid funds is 37,83%; the Measure 3.3 has not started yet.

<p>Production Methods Designed to Protect the Environment and Maintain the Countryside. The measure 3.3 comprises 3 sub-measures: soil protection against erosion; biodiversity conservation through traditional agriculture practices and ecological agriculture. The pilot areas situated in Carpathian region are Retezat National Park and Dornelor region.</p>	<p>In the Midterm evaluation of the SAPARD Program, implemented in 2004, it is stated that: "The design of the agri-environmental measures appears to be inadequate. The good intentions are not always followed by detailing of the measures to secure this. Also the evaluation of the environmental situation and the positive and negative environmental impact of the program is generally found to be insufficient and in need for further considerations, analysis and improvement".</p>
<p>The preparation through a participatory process (involving all stakeholders, including NGOs) of the Rural Development National Program for 2007 - 2013 period. The Plan comprises 4 axes: 1. Improving competitiveness, 2. Environment/land management (Agri-Environment Program and Less Favored Areas); 3. Diversification of the rural economy and Quality of life in rural areas; 4. LEADER approach. Axes 2 and 3 will especially create the base for SARD after 2007.</p>	
	<p>Regarding forestry, an efficient regulatory framework and also adequate enforcement measures aimed to reduce the increasing illegal logging and poaching in Carpathian region are not developed yet.</p> <p>The Environmental Protection Strategies (including National Strategy and Action Plan for Biological Diversity Conservation and Sustainable Use of its Components) needs also to be updated and to include more provisions regarding the agro-ecosystems and sustainable agriculture.</p>

Slovakia

Overview of agricultural policies after the year 1989

Between 1990 and 1992, an agrarian policy was formulated in the **Directive for Economic Reform**. The Directive focused on fast transformation process and adaptation of agriculture to new economic conditions.

In 1993, the **Agrarian policy of the Slovak Republic** was adopted. The main goal of the policy was to stabilize and develop agriculture. Main goals of agrarian policy were deduced from the goals of policies of western European countries, focused on protection and support of agriculture.

Later on, in the framework of political initiatives, interconnections between agriculture and protection of nature were introduced into the policies. The Slovak Government proclaimed these principles in **Government Statement** in 1998 and 2002.

Although there is no specific document designed for sustainable agriculture and rural development in the mountain regions of Slovakia, the principles concerning SARD-M were included in other conceptual, strategic and programming documents. Agricultural policies prepared by the Ministry of Agriculture endeavoured to reconcile the three dimensions of sustainable development within the agricultural sector and rural development with respect to SARD-M, as well. The following documents include these principles, **Concept of Rural Development, Programme of Agriculture and Food Industry Development in**

the SR by 2010, Concept of Agricultural and Food Policy of the SR by 2005, Mid-term Concept of Agricultural Policy 2004 - 2006: Agriculture and Food Industry.

Specific concepts, **Concept of Sheep Breeding in the SR by 2005 and Action Plan of Organic Farming by 2010**, were prepared by the Ministry of Agriculture, as well.

On May 1, 2004, Slovakia became a member of the European Union and has acceded to building up of multifunction model of European agriculture. Introduction of environmental elements into the Common Agricultural Policy reflected in programming documents were adopted in Slovakia, (i.e. **Sectoral Operational Programme Agriculture and Rural Development and Rural Development Plan the Slovak Republic 2004 - 2006**). The programming documents contain not only analyses of the current situation in agriculture, strategic goals and suggested measures but also a financial framework. Financing of Rural Development Plan measures is from the guarantee section of EAGGF. Financing of Sectoral Operational Programme measures is from the guidance section of EAGGF.

Sustainable development of agriculture and rural areas in the mountain regions is influenced by policies prepared by other ministries such as Ministry of Environment, Ministry of Economy, Ministry of Construction and Regional Development, Ministry of Labour, Social Affairs and Family. The following documents have been adopted in Slovakia: **Strategies, Principles and Priorities of State Environment Policy; National Environmental Action Program I, II; National Biodiversity Strategy; National Sustainable Development Strategy; State Soil Policy; Concept of Forest Policy by 2005; National Programme of Tourism Development; Proposal of Strategy of tourism Development by 2013; Long-term Concept of Agricultural Biomass Utilisation.**

A regional approach is included in the **National Plan for Regional Development**, which was adopted in 2001.

Government Statements of the Slovak Republic and other adopted documents

Government Statement of the Slovak Republic, 1998

In December 1998, the National Council adopted the Government Statement of the Slovak Republic. The Government engaged to reach main targets of agricultural policy preparing a Programme of development of the agriculture and food industry for the next ten years. The Government guaranteed:

- To establish conditions which will support the transition of the Slovak agriculture to the Common Agricultural Policy via financial support of measures in the framework of the SAPARD programme;
- To support new trends in rural development identical to the trends in the EU;
- To ensure adequate living standard, social conditions and quality of life of the rural population via integrated rural policy;
- To support environment protection and sustainable development (G SR, 1998).

Government Statement of the Slovak Republic, 2002

In 2002, the Government of Slovakia guaranteed:

- To support legislative and capacity building processes with the aim to ensure implementation of CAP;
- To support intensive agricultural production but also programmes orientated towards agriculture in less favoured areas;
- To support multifunctional model of agriculture, including landscape, environment and cultural functions, development of rural infrastructure, agro-tourism, organic farming and bio-products production (G SR, 2000).

National Programme for Adoption of Acquis Communautaire

National Programme for Adoption of Acquis Communautaire has embraced the integration process of Slovakia into the EU. The first National Programme was prepared in 1998, the second one in 2002. The short-term priorities concerning SARD-M were the following:

- Establishment of Agricultural Paying Agency in the framework of the SAPARD programme by 2000;
- Designing the Rural Development Plan of the Slovak Republic 2004 – 2006;

- Capacity building for regional and structural policy and sustainable rural development policy, designing of project for the SAPARD programme for the year 2000.

Within the framework of mid-term priorities, the Programme ensured the fulfilment of basic measures of structural policy, agro-environment policy and rural development policy within the scope of the Rural Development Plan (G SR, 1998, 2000).

National Sustainable Development Strategy

National Sustainable Development Strategy was adopted in 2001. One of the strategic objectives is auto-regulation of nature and biodiversity preservation, stock of natural resources, healthy and beautiful environment for everybody. Partial objectives are listed below:

- To ensure economical exploitation of natural resources;
- To support exploitation of alternative energy sources;
- Land utilisation in the framework of the strict complying with ecological capacity;
- To respect all existing ecosystems within land management, to prefer environmental friendly systems of land management;
- To support positive attitude to nature, history and environment (G SR, 2001).

Strategic, conceptual and programming documents prepared by the Ministry of Agriculture

Although there is no specific document for SARD in the mountain regions for Slovakia, these principles have been included in other strategic, conceptual and programming documents.

On May 1, 2004, Slovakia has acceded to the building up of a multifunction agriculture model adopted by the EU. This model is in line with the overall objectives of Agenda 2000 and it is focused on environment protection measures and rural regions development, as well.

Adopted documents have reflected this policy direction. Description of the following documents is focused on SARD-M and puts emphasis on the environment protection.

Concept of Rural Development in the Slovak Republic

In September 1988, the Slovak Government adopted the Concept of Rural Development which, for the first time, underlined the necessity of an integrated approach towards rural development. Rural regions were defined on the basis of political, economic and demographic analyses. The main goal was to ensure an adequate living standard and to improve quality of life of the rural population, ensure employment and adequate income through development of economic activities in the field of agriculture, forestry and water management, processing industry, traditional arts and crafts, services and tourism.

The concept included 4 main areas of rural development:

1. Economy and employment;
2. Environment and employment;
3. Human resources development;
4. Development of science and research.

Programme of Agriculture and Food Industry Development by 2010

Programme of Agriculture and Food Industry Development by 2010 has followed the Analysis of agriculture and food industry development in the period of 1990 – 1998. The programme was adopted in 1999. The Programme has anticipated two developmental phases:

- Period of stabilisation and preparation for the accession of the SR to the EU;
- Period after EU accession with CAP adoption.

The Programme has also focused on:

- Increase of production efficiency in productive regions of Slovakia, as well as support of sustainable agriculture in less favourable regions via support of non-productive functions of agriculture;
- Utilisation of potential of agricultural land not only for food production but also for production of non-agricultural products and alternative energy resources;

- Conversion of less productive agricultural land, increase of grasslands and extensive agriculture in line with environmental programmes;
- Diversification of activities with the aim to secure employment and settlement in rural regions (MoA SR, 1999b).

Concept of Agricultural and Food Policy of the SR by 2005

In 2000, the Concept of Agricultural and Food Policy by 2005 was adopted. The Concept has followed the Analysis of Agriculture and Food Industry Development in the period of 1990 – 1998 and Programme of Agriculture and Food Industry Development by 2010. The basic objectives of the Slovak agricultural and food policy by 2005 are as follows:

1. To ensure efficient modern and competitive agriculture and food management;
2. To provide enough affordable, wholesome, high-quality and safe food from the domestic production;
3. **To ensure agricultural production in line with appropriate care of agricultural land, whose preserved condition is important for maintaining the character of the landscape, the cultural heritage, recreational and other non-agricultural economic use of the territory;**
4. To ensure sufficient income level in agriculture and food processing industry;
5. To modernise and restructure the food processing industry;
6. **To adjust agriculture to environmental requirements for conservation of soil, water, air and the natural environment, biodiversity and conservation of traditional gene pools;**
7. **To support the development of regions, especially in rural areas with a significant share of agriculture and low density of population, by developing alternative economic activities and creating additional resources for the maintenance of employment and agricultural use of resources within the framework of sustainable development;**
8. To prepare agriculture and food management for Slovakia's accession to the EU.

One of the strategic intentions for the period of 2000 – 2005 has been co-operation of agriculture in preserving and developing the rural environment and maintaining rural settlement. In greater detail, this also means:

- Improving the economic conditions and stabilising businesses in agriculture will help stabilise jobs in the countryside and maintain settlement in the countryside;
- Support for diversification of activities in agriculture towards non-agricultural activities and development of growing plants for non-agricultural purposes (especially secondary energy sources) can provide more jobs and income for the rural population;
- Support for the maintenance of the landscape, ecological agriculture and the principle of gentle use of the whole production potential of the land will influence the development of the rural environment, preservation of protected areas and territorial system of ecological stability.

The pillars of the agricultural and food policy have been as follows:

Pillar I: Market regimes for decisive commodities

Pillar II: Support for operating in worse production conditions

Programme 1 – Support for less favoured areas

Programme 2 – Sheep and goat breeding

Pillar III: Modernisation and support for corporate sector restructuring

Pillar IV: General services and preparation for EU accession

Pillar V: Environmental measure

Programme 1 – Agro-environmental programme

Programme 2 – Environmental investment.

The implementation of the Concept has required an annual volume of public resources worth SKK 18 to 20 billion, which totals SKK 96 billion for the years 2001 - 2005. The implementation of Pillar II and Pillar V has required SKK 22 billion for the years 2001 - 2005 (MoA SR, 2000a).

Mid-term Concept of Agricultural Policy 2004 - 2006: Agriculture and Food Industry

Mid-term Concept of Agricultural Policy 2004 - 2006: Agriculture and Food Industry was adopted in response to accession into the EU, finalisation of transition to market economy and adoption of CAP in

Slovakia. Basic objectives are very similar to the objectives of the Concept of Agricultural and Food Policy by 2005:

1. Keeping and reinforcing of competitive agricultural and food management;
2. Providing high-quality and safe food;
3. **Support to agriculture, its functions, protection and maintenance of natural resources (mainly soil and water), biodiversity protection and cultural values of landscape, maintenance of settlement and infrastructure of rural regions;**
4. **Preservation of agricultural land management in less favourable regions;**
5. **Ensuring sustainable viability of rural regions.**

To reach above mentioned objectives, there is a necessity to fulfil the following tasks:

- Capacity building for CAP implementation, structural supports, legislation for people and animal health protection;
- Measures for accelerated restructuring process;
- **Preservation of agricultural land management in less favourable regions** as well as support of organic farming. The practical implementation is ensured by the **Rural Development Plan 2004-2006**;
- **Strengthening of the role of agriculture in rural development.** Support of diversification of activities in agriculture towards non-agricultural activities, agro-tourism, infrastructure modernisation, protection and development of social resources and cultural values of rural regions. The practical implementation is ensured by **Sectoral Operational Programme Agriculture and Rural Development 2004 - 2006**;
- **Preservation and development of employment in rural regions.** Support of regional development of small and medium businesses. The practical implementation is ensured by the **Rural Development Plan of the Slovak Republic 2004 - 2006** and **Sectoral Operational Programme Agriculture and Rural Development 2004 - 2006**;
- Support of science, research and education;
- Support of information technologies in agriculture (MoA SR, 2004).

The implementation of the measures is supported by national and the EU financial sources via the Rural Development Plan of the Slovak Republic 2004-2006 and Sectoral Operational Programme for Agriculture and Rural Development 2004 - 2006.

Sectoral Operational Programme for Agriculture and Rural Development 2004 - 2006

The Programme has one priority, corresponding to the priority of the Rural Development Plan:

- Multifunctional agriculture and sustainable rural development.

Adopted strategies, operation objectives are as follows:

1. To increase agricultural production along with environment protection and welfare of animals. To improve processing and production of agricultural and fish products, quality of food;
2. **To improve social conditions and quality of life of the rural population through improvements in living standards;**
3. **To improve land consolidation;**
4. To support education and trainings.

Priorities and measures:

Priority 1 – Support of productive agriculture

Priority 2 – Support of sustainable rural development

Measure 2.1. Sustainable forest development, support of forestry

Measure 2.2. Fish breeding

Measure 2.3. Rural development support

Measure 2.4. Education

Measure 2.5. Technical assistance

Both of the above priorities have resulted from the priority of Agriculture and Rural Development in the National Plan for Regional Development. Financing of this priority comes from structural funds, guidance section of EAGGF and FIG.

Some of the measures are focused on decreasing and removing negative effects caused by agricultural sources on the environment, water and soil. Investments have been used for reconstruction, modernisation and construction of new farm buildings, fulfilling the EU standards for animal breeding (welfare). Reconstruction of storages for plant agricultural production and animal excrements has been supported in the framework of adopted measures with the aim to keep the EU hygienic standards (MoA SR, 2003b, c).

Rural Development Plan 2004 - 2006

The Rural Development Plan is one of the programming documents for the realization of defined measures according to the Regulation no. 1257/1999 as well as Mid-term Concept of Agricultural Policy 2004-2006: Agriculture and Food Industry. The Rural Development Plan was elaborated in participation with the Sectoral Operational Programme for Agriculture and Rural Development 2004 – 2006.

The Plan has one priority, corresponding to the priority of Sectoral Operational Programme:

- Multifunctional agriculture and sustainable rural development.

Adopted strategies, operational objectives include:

1. Investment in agricultural holdings
Operational objective: Increase the labour productivity and competitiveness of companies while maintaining environmental protection;
2. Education and training
Operational objective: Increase the level of technical education;
3. **Less-favoured areas**
Operational objective: **Maintain agriculture in disadvantaged areas;**
4. **Agro-environmental support**
Operational objective: **Introduce agricultural production procedures to protect and improve the environment;**
5. Improvement in processing and marketing of agricultural products
Operational objective: Increase the competitiveness and products quality while decreasing negative environmental impacts;
6. Afforestation of agricultural land
Operational objective: Boost the landscape's ecological stability;
7. **Land consolidation, farm advisory system, semi-subsistence farms, community standards, anti-flooding measures, complements to direct payments**
Operational objective: **Development of rural areas.**

The principles of sustainable agriculture and rural development are involved mainly in the measures 3, 4, and 7:

3/ Less-favoured areas represent 1,628,165 ha of the total land territory, equalling 33.2% of the total land territory and 66.77% of the agricultural land. The aim is to maintain farming on the size of 1.6 million ha in less favoured areas and provide support to 2,000 agricultural entities through compensation payments of 47 Euro/ha on average.

4/ Agro-environmental support

As a part of the nitrate directive implementation, 30% of agricultural land, approximately 800,000 ha, were identified by the first proposal as vulnerable areas. NATURA 2000 – the implementation of the Directive on Birds recommends the establishment of protected areas on 1,236,545 ha, equalling 25% of the total land territory and covering 387 305 ha of agricultural land. The Directive on Habitats, whose areas overlap with the bird's areas to a large extent, applies to about 170,000 ha of agricultural land. The aim is to carry out environmentally friendly agricultural procedures on NATURA 2000 areas, which represent 12% of agricultural land (300,000 ha). The other aim is to reach 5% of agricultural land

(120,000 ha) under organic farming. Agro-environmental support consists of two parts, voluntary and mandatory.

7/ Land consolidation, farm advisory, semi-subsistence farms, community standards, producer groups, anti-flooding measures, complements to direct payments.

Finance for the Rural Development Plan measures comes from the guarantee section of EAGGF, national budget and the private sector (MoA SR, 2003a).

Concept of Sheep Breeding by 2005

The Concept of Sheep Breeding in the SR by 2005 is an important document for SARD-M. The concept has taken into account rational utilisation of grasslands mainly in mountain regions and environment protection as well as cultural rural character. Sheep breeding supports also agro-tourism in mountain regions. On the other hand, lamb meat is in short supply on Slovak as well as on European market.

Further development of sheep breeding requires:

- Increase in sheep production efficiency;
 - Support of milk and meat production;
 - Increase in the utilisation of semi-intensive and semi-extensive grasslands;
- Support of fencing system in sheep breeding, mechanical lactation to 25%, cooling systems, reconstruction of farm buildings. Higher education is needed, as well.

The Concept has emphasised environmental measures related to:

- Keeping anti-infection measures, increasing hygienic conditions in sheep breeding;
- Keeping valid veterinary surgeon;
- Ensuring protection of water sources, especially drinking water supplies (MoA SR, 1999a).

Action Plan of Organic Farming by 2010

In contrast to West European countries, organic farming in Slovakia started to develop only 15-20 years ago. In 1991, the Regulations of organic farming were adopted in Slovakia. The Concept of organic farming in the SR was adopted in 1995. The Concept was later followed by the Action Plan of Organic Farming in the SR by 2010. In 1998, the act no. 224/1998 Coll. of law on organic farming and organic products was adopted, amended by the act no. 421/2004 Coll. of law on organic farming.

The Action Plan was designed in line with European Action Plan for Organic Products and Farming. The main objective is to increase efficiency of agriculture and quality of life of rural population.

The Action Plan is also focused on mountain regions:

- To establish market with organic products from mountain regions;
- To adapt common European agricultural policy for mountain regions;
- To establish integrated administrative and controlling system (IACS).

Specific objectives of the Action Plan:

- To strengthen position of organic farming, improve its competitiveness;
- To expand market with organic products;
- To increase awareness and promotion;
- To improve advisory system, education and research;
- To improve capacity building in agriculture.

Main priorities of the Action Plan are to:

- Support production, processing and market with organic products. To reach 1,200 km² of organic farming area (5% share on the total agricultural land) by 2010. Non governmental organisations have suggested to design an ethic code of organic farmers;
- Marketing – to reach 30% of certificated organic products sold on the Slovak market;
- Support the education system and advisory services;
- Support capacity building (MoA SR, 2005a).

Policies with integrated regional principles

There was only one strategic document with a regional approach adopted - National Plan for Regional Development of the SR.

National Plan for Regional Development

National Plan for Regional Development was adopted in 2001. The Plan is a complex document focused on the regional development of the economy by 2006. Designing of this document was one of the conditions to acquire finance from pro-accession and later from structural funds of the EU. The Plan is the first strategic document with a regional approach.

The Plan outlines sectoral, as well as regional operational programmes. Sectoral operational programmes have been designed by ministries. Regional programmes have been designed by district offices in cooperation with coordination and monitoring committees. The Ministry of Construction and Regional Development has coordinated the whole process. The principle of partnership, one of the main principles of regional policy of the EU, has been adopted during the preparatory and implementation phase of the Plan.

Ministries, state administration bodies, public administration bodies, regional bodies, offices, municipalities, regional agencies, corporations, research and expert bodies, non-governmental organisations have participated in designing the Plan. The National Plan for Regional Development as a mid-term planning document is continuously adapted to the economic processes and social situation in Slovakia.

Main role of the Plan is to adjust disparities between regions and to reach socio-economic cohesion and living standard improvements. The objective of the Plan is to ensure such an increase of GDP so that Slovakia will reach 60-65% of GDP average of the EU by 2006.

Global objectives of the National Plan for Regional Development are as follows:

1. Increase of employment, decrease of unemployment rate;
2. Support of competitiveness production;
3. Progress of technical and social infrastructure;
4. Progress of production and services based on domestic sources;
- 5. Protection and enhancement of environment;**
- 6. Development of rural regions and multifunctional agriculture.**

The Plan includes sectoral programmes:

- Human resources;
- Industry and services (including support of biomass utilisation as alternative energy source);
- **Multifunctional agriculture and rural development;**
- Transport and telecommunication;
- Housing;
- Tourism;
- **Environment.**

The following regional operational programmes (ROP) were designed: ROP Bratislava region, ROP Slovakia – southwest, ROP Slovakia - northwest, ROP Slovakia – east (MoCRD of SR, 2001).

Strategies indirectly affecting the sustainable agriculture and rural development in the mountain areas

SARD-M are affected by activities of different sectors. Ministries adopt strategies or measures indirectly influencing SARD.

Strategies, conceptual documents designed by Ministry of Environment

Strategies, principles and priorities of state environmental policy

The Strategy was adopted in 1993. The main priorities were the following:

- Air protection and global environmental security;
- Ensuring of sufficient drinking water and decreasing water pollution;
- Soil protection against degradation and ensuring healthy food;
- Minimization of waste and waste disposal;
- Biodiversity protection, protection and rational utilisation of natural resources, optimal land use (MoE SR, 1993).

National Environmental Action Programme I, II

The National Environmental Action Programme II (NEAP II) was adopted in 2002. The NEAP II was designed in line with strategies, principles and priorities of state environmental policy and NEAP I, which was adopted in 1996. The main role has been to specify basis for the formulation of new objectives (i.e. water, air, soil and biodiversity protection) (MoE SR, 1996, 1999).

National Biodiversity Strategy

The National Biodiversity Strategy of Slovakia is a basic strategic document of biodiversity protection in Slovakia. The Strategy was adopted in 1997 and was designed in line with Convention on Biological Diversity (Rio de Janeiro, 1992). Implementation of the Strategy has been ensured by the Action Plan for implementation of the **National Biodiversity for 1998 – 2010** (MoE SR, 1997).

Programme of Village Renewal

The Programme of Village Renewal is a development programme. Rural populations, municipalities in cooperation with state experts and local businessmen cooperate with aim to improve and enhance the environment in villages. Its main objective is to achieve a sustainable increase in the living standards of rural population along with the preservation of typical rural features in line with sustainable development. The basic instrument of the Programme is an enhanced human activity as a driving force of the overall process, which saves financial funds. The state plays only a supporting role through consultations and financial support (MoE SE, 2005).

Strategies, conceptual documents designed by the Ministry of Agriculture

State Soil Policy

The State Soil Policy was adopted in 2001. Article no. 4 includes following principles:

- To ensure land use in accordance with principles of sustainable development;
- To ensure protection of ecological functions of soil in the process of land use (MoA SR, 2001a).

Concept of the Forest Policy by 2005

The main objectives of the Concept are the following:

- Ownership adjustment, management and protection of forests;
- Economy, financing and marketing policy of forest management;
- Employment and social policy in connection with forest management;
- Approximation of Slovak forest management with the EU countries (MoA SR, 2000b).

Strategies, conceptual documents designed by the Ministry of Economy

National Programme of Tourism Development

The National Programme of Tourism Development was adopted in 2000. The analysis showed that there was a necessity to develop in the following forms of tourism in Slovakia:

- summer recreations in **mountains**;
- winter **mountain** sports;
- town and cultural tourism;
- spa and health tourism;
- **rural tourism and agro-tourism.**

The coordination on local, regional and national level for activities which lead to tourism development is very important, as well as improving of informatics, promotion and information offices network (MoEc SR, 2000).

Proposal of Strategy of Tourism Development by 2013

The Strategy includes main objectives focused on tourism development in Slovakia during the 2007 – 2013 period in line with the planning period of the EU. The Strategy will serve all stakeholders at the local, regional and national levels for their decision making and coordinating processes. The strategy supports development of tourism forms, which are outlined in the National Programme of Tourism Development, including rural tourism and agro-tourism (MoEc SR, 2005).

Long-term Concept of Agricultural Biomass Utilisation

The Concept was adopted in 2004 and has followed the Concept of Alternative Energy Sources Utilisation. The main objective of the Concept is to reach 12% renewable energy sources utilisation of the total energy sources utilisation by 2010. Nowadays, agriculture shares 3.3% of the national energy consumption. At the same time, agriculture is a biomass producer with a much higher energy potential. Agriculture represents 42% of the total renewable energy sources. At present, biomass utilisation is in a testing phase. In addition, energy potential from animal excrements is considerable and is utilised on four farms in Slovakia. Wood biomass is an important source of biomass, as well. (MoEc SR, 2004).

International conventions, directives

The Slovak Republic has acceded to several international conventions and has implemented directives with an environmental approach, which directly or indirectly affects sustainable agricultural development.

International conventions

- Convention on Biological Diversity (Rio de Janeiro, 1992);
- Convention on Wetlands of International Importance (Ramsar, 1971);
- UNESCO Convention on World and Cultural Heritage Protection (Paris, 1972);
- United Nations Framework Convention on Climate Change (1998).

Directives

- Council Directive 79/409/EEC on the conservation of wild birds;
- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora;
- Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources;
- Council Directive 96/61/EEC concerning integrated pollution prevention and control (Directive IPPC);
- Council Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture.

The Ministry of Agriculture has designed codes for good agricultural practices:

- Soil Protection (MoA SR, 1996);
- Principles of Good Management of Fertiliser and Manure Utilisation (MoA SR, 2000c);
- Water Protection against Nitrates Pollution from Agriculture (MoA SR, 2001b).

Strengths and weaknesses of SARD-M policies

Although many strategic, conceptual and programming documents have been adopted in Slovakia during the last decade, they were elaborated for different strategic goals without adequate co-operation and interconnections. Some of the set up goals were too general, which precludes their effective monitoring. Some of the measures were set up inadequately (e.g. agro-environmental measures in the Rural Development Plan in the Slovak Republic 2004-2006).

Strengths	Weaknesses
<p>Strategic conceptual documents respect national particularities and are designed in line with the EU policy. Adopted documents increasingly take into account the issue of mountain regions.</p> <p>Preparing of the merge of existing programming documents, the Sectoral Operational Programme and the Rural Development Plan, for the period 2007 – 2013.</p>	<p>Many strategic, conceptual and programming documents elaborated for different strategic goals often without adequate cooperation and interconnections.</p> <p>Sectoral approach dominates. Regional policies are insufficient.</p>
<p>Existing legislative frameworks supporting measures included in strategies (Compensation for land management restriction, introduction of programmes of agricultural activities in vulnerable zones, introduction of good farmer practises in less favoured zones and zones with environmental restrictions, Codes of good agricultural practices)</p>	<p>Complex specific document for the sustainable development of agriculture and rural areas in the mountain regions for Slovakia has not been designed.</p>
<p>Effort to reconcile the three dimensions of sustainable development (social - economic – environment pillars) within the agricultural sector and rural areas.</p>	<p>Short tradition and adaptation period for new payment system. Frequent changes in system regulation and financial support. Time consuming administration and approval of submitted projects. Insufficient professional potential of farmers, non-understanding of fund raising.</p>
<p>Financial support of environmentally friendly measures.</p>	<p>Inaccurate and very general objectives, without sufficient quantification and consequent controlling system.</p>
<p>Effective controlling system in some areas.</p>	<p>Insufficient monitoring system of effectiveness of adopted measures. Missing transparent indicator mechanism in many areas (biodiversity).</p>
	<p>Insufficient range of agro-environmental schemes (concerning biodiversity, soil protection or ecological stability of agricultural countryside, agricultural production quality, socio-economic rural development, cultural and historical heritage of agricultural land).</p>
	<p>Insufficient training activities and advisory system. Inadequate awareness (environmental too) of the public.</p>

Ukraine

As of 1 September 2005, **the Concept of Sustainable Development** has not been adopted at the national level in Ukraine or for mountain regions as well. The conceptual basis for establishing and implementing the policy of sustainable development of the Carpathian region was set up in the report prepared by Mr. Marushevsky, the Chairman of Ukrainian environmental NGO's at the Third All-Ukraine Environmental Community Conference (Kyiv, 29 November 2001 – 1 December 2002), which was one of the steps in preparation for the Fifth Ministerial Conference "Environment for Europe".

The major principles of developing the concept of sustainable development of the Ukrainian Carpathian region are based on the **Declaration on Environment and Development** (14 June 1992, the UN Conference on Environment and Development). In the opinion of the scientists at the Institute of Regional Studies, National Academy of Sciences of Ukraine (V.S. Kravtsiv), the transition to sustainable development, which would promote preservation and regeneration of ecosystems and thereby improve the living standards of people in the Ukrainian Carpathians - might be implemented within several decades.

In the next decade, there should be a number of prerequisites established in the region to ensure the improvement of the life quality, more environment-friendly production and regeneration of natural potential of the territory. It would require:

- improvement of management system at all levels of the state administration as well as at the local self-government level;
- in the transition period, it is of great importance to develop positive perceptions and provide the citizens with understandable interpretation of the strategy of regional sustainable development;
- these steps should be facilitated by the environmental education and community awareness raising, involvement of mass media in dissemination of knowledge on sustainable development, support of NGOs and state nature management organizations;
- accelerated development of the scientific and technological sectors involved in resource saving activities.

The mountain areas of the Ukrainian Carpathians are physically isolated from more developed plain regions (in some cases, the distance between populated locality and district central town is over 50-60 km). It limits the access of the remote mountain communities to skilled health care, cultural establishments, etc. The physical isolation is a great obstacle for self-organization of mountain communities to stand for their collective interest.

In general, the following items have been determined to be the key strategic priorities of regional development of mountainous communities:

- development of human resources, establishment of labor market;
- utilization of recreation potential and establishment of a modern market of recreational services using this potential;
- development of agricultural complex;
- environmentally safe development of the forest industry;
- development of social infrastructure;
- enhancement of cross-border cooperation;
- environmental protection, protection of the territory against hazardous natural processes and natural disasters.

It is clear that the implementation of the above strategic priorities requires development of adequate programs in the context of sustainable development and, most importantly, proper funding by the state. Unfortunately, the current political situation in Ukraine and, primarily, the economic decline in 2005, imply that no progress has been made in this area.

The state should support the development of mountain areas by enforcing application of entire scope of Laws of Ukraine **"On Status of Mountain Settlements in Ukraine"** and **"On Incentives for Regional Development"**. In June 2003, the Working Group of the Committee of Economic Policy at the Department of National Economy, Property and Investments submitted the draft law (draft law No. 3384/II) for further consideration.

The draft law included a definition of "depressive territories". Thus, a region is regarded as depressive, if it has shown the lowest average rates of gross added value per capita over the last five years. In addition, the definition applies to those rural regions, which have shown the lowest population density and the lowest natural population growth, the highest portion of people involved in agriculture and the lowest agricultural output per capita over the last three years.

Thus, the mountain districts of the Ukrainian Carpathians have good chances of obtaining the status of "depressive territory". According to the draft law, this status calls upon the national government to take special measures and create incentives toward the development of such regions.

In the last years, some regional administrations adopted regional development programs to implement the activities promoting agricultural and rural development.

Thus, **the Concept of Sustainable Development of the Transcarpathian region** was approved by decision of the Oblast Council of the fourth convocation, as of 16 October 2002, No. 71. The concept asserts the long-term (20-30 year) prospects of environmental, economic and social development of the region. The priorities determined by the Concept will be taken into account in such program documents as strategic programs of economic and social development of the region; programs of economic and social development of the region developed for the function period of the current regional authority; annual programs of economic and social development of the region. However, the document does not single out the issues of sustainable development of the Transcarpathian region.

In 1998, the **"Complex Program of Environmental, Economical and Social Development of the Mountain Rakhiv District for the Period of 1998-2005"** was ratified by the Decree of the Cabinet of Ministers of the Ukraine at the level of district administrative units. In 1996 the District Council of Rakhiv, activists of district "Hutsulshchyna" society and scientists of the Carpathian Biosphere Natural Reserve responded to a tender called by the Foundation of Carpathian Euro Region Development and International Renaissance Foundation and developed a project titled "Creating conditions for sustainable environmentally oriented development of mountainous communities in Rakhiv district". The project was approved and the Rakhiv District Council received a grant of 143.2 thousand USD in the period from 1997 to 2000 for project implementation. The project was implemented by the charity foundation "Carpathian Agency for Regional Development".

The list of documents passed in Ivano-Frankivsk region includes **"Program of Socioeconomic Development of Ivano-Frankivsk region - 2010"** (decision of Oblast Council from 27 August 1999 No. 189-9/99); "Program (major guidelines) of socioeconomic development of small town and rural communities of Ivano-Frankivsk region for the period until 2010" (decision of Oblast Council from 27 March 2003 No. 167-6/2003), "Strategy of economic and social development of Ivano-Frankivsk region until 2011" (decision of Oblast Council from 12 March 2004 No. 330-10/2004), "Program of land reform in Ivano-Frankivsk region until 2010" (decision of Oblast Council from 12 March 04 No. 332-10/2004), "Program of developing village social sphere for the period until 2005" (decision of Oblast Council from 18 June 2003 No. 215-7/2003), "Program of developing forestry and hunting sectors in Ivano-Frankivsk region for 2001-2015" (decision of Oblast Council from 14 September 2004 No. 452-12/2004) and many other programs pertaining to rural and agricultural development for the entire region without singling out mountainous districts as a separate line item.

In June 2004, Lviv region submitted its Development Program **"Main Strategic and Operation Goals of the Development of Lviv Region"** for public discussion. As of 1 September 2005, the Program has not been adopted, while the wording of the document lacks operational goals for mountainous territories.

In 2003, in Chernivtsi region, a draft **Concept of Socioeconomic Development of Chernivtsi Region** until 2011 was developed. However, the Concept has not gone through the procedure of adoption by Oblast council.

On the one hand, we can see a great number of regional programs and projects in the four regions covering the mountain populated localities, which belong to the sphere of influence of the Carpathian Convention.

On the other hand, these documents fully lack a "mountain" component of sustainable regional development in rural and agricultural aspects. In our opinion, the major reason for this situation is insufficient understanding of the governments regarding the instruments that Ukraine can obtain by ratifying the Convention.

Notably, the specific measures of sustainable development programs planned by regional administrative units (regions, districts) also depend on whether the Supreme Council of Ukraine passes the national Concept of Sustainable Development and other appropriate legal acts.

Strengths and weaknesses of SARD-M policies

Approaching the SARD-M policy implementation in the territory of the Ukrainian Carpathians, it should be unfortunately stated that **the elements of this policy are often missing or even totally absent in Ukraine**. Therefore, in this Report, only empirical assessment of strengths and weaknesses of the SARD-M policy implementation within the framework of the Carpathian Convention can be considered

In our opinion, the following aspects could be related to the **strengths of the SARD-M related policies** implementation in the mountain areas of the Ukrainian Carpathians:

- Geographical location of the mountain areas in Ukraine, which implies natural and historically sustainable connection to the neighboring parts of the Carpathians. Such location ensures the quantitative and qualitative preservation of the traditional methods of agricultural and rural development as a consequence of rather far distances to the industrial and urban centers along with a high level of protected areas (e.g. large territories of virgin and close to virgin forests);
- SARD-M policy implementation could provide support for increasing the self-government bodies' (regional and local authorities) role in the decision-making and priorities determination process within each specific area in the Ukrainian Carpathians;
- it might be surprising, but realistic, that SARD-M policy would be treated without any confrontation from the local population side because of rather low level of economic requirements and needs to be satisfied as well as readiness to be involved into the process.

Assessing the **weaknesses of the SARD-M related policies in the Ukraine mountain region** it is worth to point out the following:

- lack of the relative state policy along with an absence of a background and structured state/regional strategy for the implementation of the SARD-M requirements;
- lack of a state financial support for infrastructure, even during the implementation-period of the Law on the Status of the Mountain Localities;
- missing legislation framework;
- missing statistical data, e.g. on a scale of felling (illegal felling);
- accelerating rate of emigration, which is not taken into account in the official statistics; decrease of the natality rate etc.

At present, it is rather clear that Ukraine is not ready to implement SARD-M policies as it lacks the background for its prerequisites. Thus, it should become a main objective of the international society to draw attention of the stakeholders, i.e. state bodies, civic society, local population, business structures, to the merits and advantages of SARD-M policies.

8. Institutions responsible for designing and implementing the policies for SARD in the mountain areas - strengths and weaknesses

Romania

Institutions in charge for designing and implementing the policies for SARD in the mountain regions at the national level

1. Ministry of Agriculture, Forestry and Rural Development (MAFRD)

MAFRD is the central public authority that has coordination, regulatory, monitoring, and control duties in the field of agriculture, forests and rural development. MAFRD is the most interested authority in regulating the legislative and institutional framework for mountain regions. Under the MAFRD, the Law of Mountain Regions and the Sustainable Strategy of Mountain Regions has been developed.

It has 5 main directorates lead by 5 state secretaries: agriculture, forestry, rural development, EU integration, administration. Within the framework of the rural development directorate, the **National Agency of Mountain Area (NAMA)** was established according to the Law of Mountain Region no. 347/2004, which has the main attribution to apply the government policies in the field of the development and protection of mountain communities and the environment.

NAMA is in charge of the Secretariat of the Inter-Ministerial Committee for mountain regions, which is regulated by the Governmental Decision no. 318/2003 and also coordinates the activities of the Training and Innovation Centre for Development in the Carpathians.

Other **institutions subordinated** to MAFRD are:

- 1. National Agency on Agriculture Consultancy** – with attributions in know-how transfer and consultancy for the farmers.
- 2. SAPARD Agency** – the national authority responsible for the financial and technical implementation of the SAPARD Program. The agency has one central unit and 8 implementation regional offices.
- 3. State Domains Agency (SDA)** is a specialized institution in charge with the privatization of the agricultural enterprises and the granting/leasing of the State's public and private ownership lands, having agricultural purposes, and which are administered by these enterprises.

The SDA main responsibilities are to: exert proprietary rights over the agricultural lands under the State's private domain; administrate the agricultural lands under the State's public and private domain and ensure their efficient exploitation through grants/leases to specialized legal entities, individual farmers or agricultural associations; privatization of the state-owned agricultural companies through sales of shares, through restructuring and sales of assets or through the management of privatization; concede or lease public assets, activities and services under the MAFRD jurisdiction.

- 4. Research Institute for Soil Science and Agro-chemistry (ICPA) Bucharest** – with attributions on scientific research and technological development in the field of soils, agro-chemistry and environmental protection. ICPA scientifically co-ordinates the Romanian network of Soil Survey & Testing Offices (OSPA), which includes 37 county offices.

- 5. National Company on Management of Fishery Fund** – with attributions in managing the living aquatic resources belonging to the domain of the state.

- 6. Territorial Directorates on Forestry and Hunting**, which is the control and inspection authority on forestry and hunting.

Some institutions are also **functioning under the authority of the MAFRD**. The main ones are:

- 1. National Administration on Land Improvements** which is the administrator working on land improvements of national interest;
- 2. National Forest Administration – Romsilva** is responsible for the unitary management of state-owned forests, according to the forest management, plans and forestry regulations, in order to increase the forest contribution in improving the environment and to supply the national economy with wood and other forest related products and services. In the structure of National Forest Administration – **Romsilva**, territorial units (at county level) are functioning with no legal identity (Forest Directorates). One unit, the Research and Management Planning Institute, is functioning with legal identity.

The organizational and functional structures of the territorial units are approved by the National Forest Administration - Romsilva's administration Council. NFA has financial autonomy and manages the State Forests through its 41 County Forestry Directorates. NFA includes the Research and Management Planning Institute, which performs the State forests inventory and undertakes forest management on private or community-owned forests on a contractual basis.

The County Forest Directorates - territorial structures - are responsible for supervising all forest districts activities in their area of authority. A manager manages the day-to-day activities of the County Forest Directorates and the Steering Committee decides management strategies. County Forest Directorates have legal entity status delegated by NFA in certain area of responsibilities: supervising forest districts activities; organizing standing wood and log auctions; contracting the wood logging activities and signing the harvesting contracts; controlling wood harvesting activities (wood harvesting, felling reports, sanitation felling); participating to the revision of forest management plans.

Forest Districts are the management units directly dealing with forest management, and are managed by the Head of the Forest District. Forest districts do not have legal entity status, and is represented in all contractual issues by the County Forest Directorate. Forest districts are implementing the forest policies and norms according to management plans, undertaking specific management tasks as following: ensuring forest regeneration; preventing and stopping illegal activities; supervising and controlling the wood harvesting and transportation activities; establishing and implementing operation plans mentioned in the forest management plans; monitoring forest health; game management; harvesting non timber forest products; marking trees to be extracted during the harvesting process with a numbered hammer-marker, both for state forests and private owned forests.

The NFA plays also a very important role in the conservation of biodiversity in Romania, because the Ministry of Environment and Water Management (MEWM) delegated, through a contract, the administration of National and Natural Parks, which include forests. In the Carpathian Mountains, with one exception (Ceahlau Natural Park administrated by Neamt County Council), the others are administrated by NFA. Three park administrations were established within the NFA structure, as models through the GEF Biodiversity Conservation Management Project and 13 new administrations were established after 2003. The NFA administrates 16 of the national and natural parks out of the total of 18.

With the new establishment of new protected areas through the GD 2151/2004, NFA manifested again the intention to administrate another four National and Natural Parks situated in the Carpathian Mountains.

The following institutions function **under the coordination** of the MAFRD:

- 1. The Academy of Agricultural and Forestry Sciences "Gheorghe Ionescu-Sisesti" (AAFS)**, which is the national forum for scientific recognition as well as the specialized public institution entitled to manage and coordinate the activities regarding the scientific research and technological development in the field of agriculture, forestry, food industry and environmental protection.
2. According to the Law of Mountain Regions, and for the implementation of the Sustainable Development Strategy of the Mountain Regions through the GD no. 318/2003, the **Inter-Ministerial Committee and the County Comities for mountain regions** has been established. The Inter-Ministerial Committee for mountain regions was established in connection with the Ministry of Agriculture, Forests

and Rural Development and is formed by the representatives of the following ministries: Ministry of Agriculture, Forests and Rural Development; Ministry of Administration and Internal Affairs; Ministry of Environment and Waters Management; Ministry of Transport, Construction and Tourism; Ministry of Culture and Religious Affairs; Ministry of Education and Research; Ministry of Public Finance; Ministry of Economy and Trade; Ministry of Health and Ministry of Labour, Social Solidarity and Family. The National Agency of Mountain Areas provides the secretariat of the Committee.

The main aim of the Inter-Ministerial Committee is to coordinate and supervise projects, policies and strategies in sectors regarding the environmental protection and sustainable development of the mountain regions at the national level.

3. According to the GD no. 318/2003, 28, **County Committees for mountain region** (28 counties are included in the mountain region of which 27 are in the Carpathian region) have been established. The County Committees are composed of representatives from the Prefect, the President of the County Council and representatives at the local level of the ministries enlisted above.

The main aim of the County Committees is to coordinate and supervise local projects concerning environmental protection and sustainable development of the mountain areas at the local level and also to implement locally the Inter-Ministerial Committee decisions.

The following institutions are functioning at the regional level: the **Directorates on Agriculture and Rural Development at the county level**, which are the representatives of MAFRD at county level; **Soil Survey & Testing Offices (OSPA)**, which include 37 county offices; **the Territorial Directorates on Forestry and Hunting**, subordinated directly to MAFRD, and are the control and inspection authorities on forestry and hunting; **County Committees for mountain regions; the Forest Directorates** at county level.

The **local levels (municipalities and localities)** are represented by the Local Councils and private farmers as well as forest owners associations covering 41 branches.

The local NGOs could be mentioned as stakeholders of the activities concerning policy issues in agriculture and rural development. Therefore, the General Association of Sport Hunters and Fishermen (GASHF) plays a specific role in games and fish administration. It has lease contracts with the NFA for different unit areas for hunting and fishing. GASHF administrates almost 60% from the entire national surface provided for hunting (fonduri de vanatoare). The GASHF has also its county branches.

2. Institutions related to the environmental protection and biodiversity conservation issues connected with the agriculture and forestry domains

Ministry of Environment and Water Management (MEWM)

MEWM is the central public authority in the field of environment and waters management. It has coordination, regulatory, monitoring, and control duties on environmental aspects of all articles of the Carpathian Convention. MEWM coordinates the Inter-ministerial Committee for the coordination of the integration of environmental protection into the sectoral policies and strategies at the national level. MEWM hosts the technical Secretariat of the National Environmental Action Plan (NEAP) by updating the NEAP and initiates and/or participates in cooperation initiatives on the environment with different stakeholders, such as other countries, international organizations, ministries, local public authorities, NGOs, general public, business sector, professional and trade union associations, etc.

National Environmental Protection Agency (NEPA), Regional Environmental Protection Agencies (REPAs), Environmental Protection Agencies (EPAs) and other relative institutions

In January 2004, **the National Environmental Protection Agency (NEPA)** was legally established by GD no. 1625/2004. It is meant to provide technical support and advice for MEWM activities. It coordinates, from a technical point of view, **eight Regional Environmental Protection Agencies (REPAs) and 42 Environmental Protection Agencies (EPAs)**.

NEPA ensures the link with the European Environmental Agency, national agencies in the EU, Member States and other Romanian and foreign environmental bodies. It also monitors the implementation of

environmental legislation in the country, coordinates the implementation of National, Regional and Local Environmental Action Plans, executes national and international programmes and projects, and elaborates reports regarding the implementation of environmental issues.

At the beginning of 2004, the Regional Environmental Protection Agencies (REPAs) have been established within the eight development regions of Romania, based on GD No. 1626/2003, as a result of a PHARE 2000 Project titled "Technical Assistance for developing the Regional Environmental Protection Agencies and strengthening the Local Environmental Protection Agencies".

The roles and functions of the REPAs are set out in the above-mentioned GD and detailed in the Institutional Development Plan (IDP). One of the main responsibilities is environmental management at the regional level, EPAs coordination and the elaboration, implementation and monitoring of regional environmental action plans.

The Environmental Protection Agencies (EPAs) are organized in each county, carrying out at the local level the prerogatives and responsibilities of the MEWM: licensing and enforcement, EIA procedures, organizing public participation, environmental monitoring and biodiversity conservation. EPAs also coordinate the elaboration, implementation and monitoring of local environmental action plans.

National Environmental Guard (NEG)

It operates under the MEWM and it is the National authority responsible for control (enforcement) and complying with the environmental protection legislation.

Romanian Waters National Administration (RWNA)

Created in 2002 under the authority of the Ministry of Environment and Water Management it is the National Authority in charge of all the strategies regarding the management and exploitation of water resources, and administrates the national network of hydrological, hydro-geological and quality measurements of the public waters.

The Romanian Waters National Administration has a structure formed of Water Directorates, organized as basins and groups of basins.

Directorate for Biodiversity Conservation and Biosecurity (DBCBC)

It is operating within the MEWM and is the Focal Point for the Carpathian Convention. DBCBC functions as office/focal point for the following institutions: Office of Biological Diversity Conservation/National Authority CITES, Office of Management of the National Network of Protected Areas/National Focal Point IUCN, Office of Agriculture, Rural Development and Ecological Reconstruction/Duty FAO, Office of Environment and Public Health, Office of Ecological Information and Education/National Duty NATUROPA).

The main attributions of the Directorate connected with the Carpathian Convention are:

1. Coordinating nature conservation activities, elaborating policies and strategies for biological diversity conservation and sustainable use of its components;
2. Coordinating the management of protected areas and natural monuments, by the territorial Environmental Protection Agencies;
3. Funding, elaborating, and proposing enforcement or promotion, in cooperation with the Romanian Academy, of measures and normative acts for biological diversity conservation and for management of the National Network of Protected Areas;
4. Proposing the normative acts and projects to be included in the National Network of other protected areas or natural monuments, together with Romanian Academy and specialized institutes;
5. Participating in the approval of the ecological impact studies and assessments for the works of planning use, of the investments and of exploitation of some natural resources, in respect to the conservation of the natural habitats and species diversity.

At local level, the Directorate is represented by similar departments under the territorial Environmental Protection Agencies with functions regarding the activities of biological diversity conservation and sustainable use of its components.

The Romanian Academy is the national scientific authority with responsibilities in the field of endorsing, certifying, monitoring and scientific control (through the **Commission for the Protection of Natural Monuments**).

UNESCO National Commission, through the **Man and Biosphere (MAB) Committee** is responsible for the coordination of biosphere reserve management.

Strengths and weaknesses: Institutions responsible for designing and implementing the policies for SARD

Strengths	Weaknesses
Functioning of the Direction for Rural Development and also the National Agency for Mountain Areas (NAMA) subordinated to the Ministry of Agriculture, Forestry and Rural Development (MAFRD).	
<p>An Inter-Ministerial Committee of Mountain Regions was established in Romania with a mission to integrate the sustainable development and biodiversity conservation in all activities developed in mountain regions comprising representatives from different relevant ministries.</p> <p>The County Committees (in 28 counties) comprise the Prefect, the President of the County Council and representatives at the local level of the ministries enlisted above. The main aim of the County Committees is to coordinate and supervise local projects concerning the environmental protection and sustainable development of the mountain areas at the local level and also to implement locally the Inter-Ministerial Committee decisions.</p>	<p>The Inter-Ministerial Committee and the County Committees for the mountain region were just established, but were not supplied with an efficient functioning mechanism.</p> <p>A capacity and a number of the personnel working for biodiversity conservation under the Ministry of Environment and Water Management (MEWM) is underestimated and, in most cases, are overloaded with too many responsibilities.</p> <p>The fact that the National and Natural Parks Administrations are functioning under the National Forestry Authority/ MAFRD and not under the MEWM, which is the public central authority in the field of environmental protection (Romania is a unique Carpathian country in this situation).</p>
	<p>The main funds for National and Natural Parks come from the income generated by the National Forestry Authority/ ROMSILVA, the state company on forests management when the income of the company will be reduced due to the restitution of forests.</p> <p>The overlapping between MEWM and MAFRD is observed, because the Mountain Area Law and the Sustainable Development Strategy on Mountain Areas, approved by a GD, could be interpreted as providing many attributions to MAFRD, which overlap the attributions of the MEWM.</p> <p>The institutional structure requested by the implementation of SAPARD and the future Rural Development National Program (2007-2013) will need a large amount of funds and trained people (more than 5000 persons after 2007), which is a big challenge for Romania.</p>

Slovakia

The **Ministry of Agriculture** plays the main role in designing and implementing the policies for SARD-M. Other ministries, state administration bodies, public administration bodies, regional governments, regional bodies, offices, municipalities participate in the policy implementation process. In accordance with the principle of partnership, regional agencies, corporations, research and expert bodies, non-governmental organisations participate in policy implementation, as well.

Government of the Slovak Republic

- Approves strategic, conceptual and programming documents, fundamental measures concerning agricultural and rural development including mountain regions;
- Submits to the National Council, legislation proposals affecting agricultural policy and rural development;
- Approves budget for policy implementation.

Ministry of Agriculture

- Develops strategic, conceptual and programming documents and submits prepared documents to the Government for approval;
- Co-operates with economic, environment and social partners;
- Monitors and evaluates progress of set up goals;
- Ensures project selection and independent project appraisal;
- Constituted SAPARD Agency (which was transformed to Agricultural Paying Agency), Agency for Rural Development, Agro-institute Nitra, monitoring committee;
- Ensures co-operation with the EU institutions, coordinates and controls financial flow from the EU funds.

SAPARD Agency

The SAPARD (Special Accession Programme for Agriculture and Rural Development) Agency played an important role during the accession period. The main task of the Agency was to support efforts of the SR as an accession country to follow the Common Agricultural Policy. The entire process has been developed under the Council Regulation EC No. 1257/1999 on support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF) amending and repealing certain Regulations. A direct support was undertaken according to the Council Regulation EC 1268/1999. In 2000, the SAPARD Programme was approved by the Council Regulation No. C (2000)/3327.

Main tasks of SAPARD Agency are:

- Arranging reception of finances and administration of finances assigned for supporting projects of the SAPARD programme through the National Fund of the Ministry of Finance of the Slovak Republic from the Guarantee section of EAGGF and from the state budget;
- Administration and verification of applications, conclusion of contracts and monitoring of prepared programmes, report on pilot and other programmes according to criteria defined in the Agricultural and Rural Development Plan;
- Providing authorisation for payments, accounting, execution and monitoring of payments using finances from the Guarantee section of EAGGF and from the state budget;
- Execution of internal, external and technical control;
- Archiving of documents and accessing them to audit bodies of the Slovak Republic and the European Union;
- Providing requested term reports and grounds for using finances from the Guarantee section of EAGGF and from the state budget, and on abundance of limits and their submission to the competent bodies and authorities.

The SAPARD Agency supported measures focused on adaptation of Slovak agriculture to CAP, food quality and consumer protection, rural development, environment protection and technical support. Four basic tools were used for support in mountain regions:

- Credit programme;

- Programme Start 2000;
- Micro-loans programme;
- Programme for wood raw material processing.

The Agency has followed in SAPARD Programme implementation after the accession of the SR to the EU. Since 2004, the Agency is a branch of the established Agricultural Paying Agency and manages the implementation of measures involved in the Sectoral Operational Programme on Agriculture and Rural Development and Rural Development Plan of the Slovak Republic 2004-2006.

Monitoring and evaluation of the SAPARD Programme is carried out by the National monitoring SAPARD committee. The members of the committee are representatives of state administration bodies, associations, non-governmental organisation and the EC. Monitoring SAPARD committees have been established on regional level as well.

In 2003, 497 projects (210,257 thousand SKK) were approved. In 2004, already 947 projects (1,557.4 thousand SKK) were approved, of which only 18,689 thousand SKK were used for agro-environmental measures. The main part of the budget was used for the improvement of processing and marketing of agricultural and fish products (1,100,980 thousand SKK) (SAPARD AGENCY, 2003, MoA SR, 2005b).

Agricultural Paying Agency

The Agricultural Paying Agency has been established pursuant to the Act No. 473/2003 Coll. on the Agricultural Paying Agency, to support business activities in agriculture and to adjust and amend some acts. The Agency is a legal entity. It is funded from the budget section of the Ministry of Agriculture. The Agency is a budgetary organisation.

The objective of the Agency is to support the agriculture, food processing, forestry, fisheries and rural development sectors within the territory of the Slovak Republic, providing funds from the National Budget and from the European Community Budget, particularly from the European Agriculture Guidance and Guarantee Fund (EAGGF) as well as from the Financial Instrument for Fisheries Guidance (FIFG) in form of direct payments, financing of agriculture and rural development programmes in terms of the Sectoral Operational Programme.

The Agency ensures:

- Acceptance of applications for grants within the Sectoral Operational Programme, evaluation of the fulfilment of conditions for grant award, provision of grants to final beneficiaries, control of whether fund utilisation conditions are respected, monitoring of contractual conditions observance, continuity of the SAPARD Programme implementation;
- Acceptance of applications for grants within the Rural Development Plan (financing from the Guarantee Section of EAGGF and FIFG), evaluation of the fulfilment of conditions for grant award, provision of grants to final beneficiaries, control of whether fund utilisation conditions are respected, monitoring of contractual conditions observance;
- Acceptance of applications within direct supports for approved aid schemes, evaluation of fulfilment of conditions for grant award, provision of grants to final beneficiaries, control of whether fund utilisation conditions are respected, monitoring of contractual conditions observance;
- Organisation of market with selected agricultural commodities;
- Administration of national supports;
- Establishment and implementation of the Integrated Administration and Control System (registers of applications, farmers, farms, agricultural areas, animals and special registers).

18 regional offices of the Agricultural Paying Agency have been established which replaced 36 regional offices of the Ministry of Agriculture.

In 2005, Agricultural Paying Agency administered the national financial support of 8,174,878 thousand SKK and 11,361,920 thousand SKK from the EU budget (MoA SR, 2005b).

Monitoring committees of Rural Development Plan and Sectoral Operational Programme

Monitoring of the Rural Development Plan and Sectoral Operational Programme is ensured by representatives of the Ministry of Agriculture, Ministry of Environment, Ministry of Exchequer, Ministry of Construction and Regional Development, Slovak Agriculture and Food Chamber, Association of agricultural co-operatives and trade companies, Rural parliament, Association of towns and villages of Slovakia, Union of regional associations of non-state forest owners, and the Agro-eco forum. The EU observer and the observer from the Ministry of Agriculture are involved in monitoring committees.

Regional and local institutions in charge of designing and implementing the policies for SARD-M

State administration bodies

State administration bodies are active mainly in the framework of the National Plan for Regional Development. Their main tasks are:

- Analysis of economic and social situation at the regional level;
- Cooperation during the process of designing and implementing the National Plan;
- Designing of the Sectoral Operational Programme in cooperation with municipalities and socio-economic partners;
- Monitoring and evaluation of Sectoral Operational Programmes.

Regional governments

The main tasks of regional governments are:

- Designing economic and social development programmes in regions and responsibility for their implementation;
- Designing of regional sectoral programmes and responsibility for their implementation;
- Cooperation with ministries in designing the National Plan;
- Coordination of economic and social partners in accordance with the principles of partnership with the aim to support rural activities.

Regional and districts offices

The role of regional and districts offices is to cooperate with ministries and regional governments in processes connected with regional development. The offices participate in designing the National Plan of regional development, regional operational programmes, programmes of economic and social development.

Municipalities

They ensure:

- Designing of municipality development programme;
- Ensuring the implementation of programmes;
- Participation in designing and implementation of socio-economic development regional programmes;
- Support of rural development activities;
- Establishment of various associations, which foster the socio-economic development;
- Cooperation among municipalities with the aim to ensure common development objectives.

In accordance with the principle of partnership, the agencies (i.e. Agency for Rural Development and Slovak Environmental Agency), regional agencies, associations (i.e. Association Euromontana Slovakia and Association of agricultural co-operatives and trade companies), corporations, research and expert bodies, non-governmental organisations (focused on environment protection - Agro-eco forum, Daphne, Sosna, CEA Baranček, focused on community activities – Rural parliament in Slovakia, Rural organisation for community activities, VOKA) participate in policy design and implementation, as well.

Strengths and weaknesses: Institutions in charge for designing and implementing the policies for SARD

In spite of the fact that there are many institutions involved in the policy design and implementation processes, the practical implementation of policies is inadequate. The main reason is lack of co-operation and dialogue between representatives of sectors, governmental, spatial-planning and non-governmental organisations, including farmers.

Strengths	Weaknesses
High potential of qualified experts involved in the policy design process.	Low potential of qualified experts involved in the policy implementation process at the municipality level. Lack of coordination and cooperation at the regional level.
Establishment of Agricultural Paying Agency with its offices.	Insufficient dialogue between ministries and representatives of regional governments as well as non-governmental organisations, including farmers. Missing cooperation within the Carpathian region countries as well as among the countries of other mountain regions.
High potential of the rural population for partnership-building.	Inadequate capacity building process; insufficient learning and advisory system, education of adults, missing "business incubators".

Ukraine

As was previously stated, by September 2005, there has been no legal field or institutional provision established in Ukraine to implement state policy for SARD.

Only after the adoption of the Concept of Sustainable Development, the Concept of the sustainable development of the Ukrainian Carpathians could be designed and ratified at the national level. The next stage will be to implement provisions of that Concept at the level of specific measures of Transcarpathian, Ivano-Frankivsk, Lviv, and Chernivtsi regional socio-economic development programs. The plans for development of district administrative units based on the above mentioned programs are prepared. Unless such a vertical hierarchy has been established, it is impossible to implement the policies for SARD-M.

The implementation of SARD-M policy measures envisages large assignments that should be allocated from the state budget of Ukraine. As district administrations and village councils are the key budget depositories in the Ukraine, they might assume functions of the implementation of SARD-M policies.

However, it is already clear that some elements of SARD should be implemented through international grant programs in the Ukrainian part of the Eastern Carpathians. It may also help to promote of SARD-M advantages. In 2005, every Carpathian region has non-governmental institutions with a successful experience of utilizing grants aimed at implementing a sustainable development strategy. Such institutions include Charity Foundation "Carpathian Agency for Regional Development" (Vasyl Homa, card@rakhiv.com.ua), Carpathian Environmental Club "Ruteniya" (Vasyl Sbadosh, ruthenia@cec.uzhgorod.ua) in the *Transcarpathian* region; Agency of Regional Development and European Integration (Lviv, Oksana Muzychuk, oksana@ardei.lviv.ua); Western Center of Ukrainian Division of World Laboratory (Petro Hrytysyshyn, worldlab@ipm.lviv.ua) in the *Lviv* region; Agency of Economic Development of Ivano-Frankivsk Region (Henadiy Rusanov, aedif@aedif.if.ua); "Nash Dim" Association (Yuriy Vasidlov, ourhome@il.if.ua) in the *Ivano-Frankivsk* region and Bukovyna Affiliation of National Ecocenter "Krona" (Yuriy Masikevych, krona@sacura.chernovtsy.ua); Chernivtsi Municipal Community Association "Bukovyna Partnership Agency (Arseniy Antsyperov, vovuha@chv.ukrpack.net) and Chernivtsi Region Charity Foundation "Rural Tourism – Green Carpathians" (Illya Shova) in the *Chernivtsi* region.

It is also worth borrowing the experience of neighbour states, members of the Carpathian Convention in establishing of the special agencies, which would be involved in the implementation of SARD-M policies both at the level of the entire Carpathian region and individual administrative regions.

9. Challenges and opportunities for SARD in Romanian, Slovakian and Ukrainian parts of the Carpathians

Romania

The **main challenges**, which must be overcome for a better sustainable agriculture and rural development in the Carpathian region in Romania, are:

- Poor infrastructure in the rural areas, including roads, water and methane gas distribution systems;
- Problems related to the inadequate health and education systems;
- Despite the changes in legislation made in order to comply with the requirements of the EU integration, they cannot be fully applied because of lack of resources;
- While the migration flow between urban and rural areas stopped at the national level, an intensive migration of the rural population from Romania towards more developed countries in Western Europe has started in the last years;
- Ageing of the rural population. The average age is high - 38 years old, and continues to increase;
- The implementation of organic farming practices has still yet to be achieved (strict control of "organic" and labelling) and economic incentives for organic farming do not exist. The appreciation of organic food by Romanian consumers is low. In fact, Romanian farmers practise organic farming due to a lack of funds for agrochemicals, but their products are sold on the local markets at a lower price than in stores. Great hope is put on external western European markets;
- At present, the extension and training system is inefficient, there is a lack of interest among new agricultural owners, who are old and young people not necessarily seeing their future in the countryside, especially, where the production potential is low. Consulting services for farmers are considered insufficient and professional certification for farmers is needed. At all levels, agricultural training has a very small place in Romania's educational system, far too small considering the importance of agriculture in its economy;
- Land abandonment, which continues to be very frequent in the last years, represents one of the greatest challenges and threats to biodiversity, e.g. when scrubs take over the traditional pattern of biodiversity-rich mountain pastures;
- In some areas, overgrazing (the number of livestock is greater than the carrying capacity of the grasslands) is leading to soil erosion;
- There are threats coming from the inadequate forest management, such as illegal logging of forests as well as from the sawdust production that is mainly deposited along riverbanks, and also from the inadequate management of wildlife and game species;
- The insufficient measures dedicated to protected areas and ecological networks in the Carpathian agro-ecosystems;
- The bureaucracy of the EU programmes, too complicated to be relevantly followed by the farmers;
- The weak promotion among farmers of the Code of good practices in agriculture connected with the nutrient reduction;
- The insufficient communication and cooperation between the two ministries: MAFRD and MEWM;
- In the mid-term, in the evaluation of the SAPARD Program, it is stated that: "The design of the agro-environmental measures appears to be inadequate. The good intentions are not always followed by detailing of the measures to secure this. Generally, the evaluation of the environmental situation and the positive and negative environmental impact of the program is found insufficient and in need of further considerations, analysis and improvement".

And the most **important opportunities** connected with SARD are:

- The Measure no. 3.3: Agricultural Production Methods Designed to Protect the Environment and Maintain the Countryside of the NPARD, over the 2000-2006 period, under the SAPARD Program, which provides some pilot agro-environment schemes for sites included in the Carpathian region;
- Organic farming represents one of the ways to develop a sustainable agriculture. The strategic objective of the National Plan for Agriculture and Rural Development regarding the rural areas and to ensure a framework for the implementation of the SAPARD Program is to achieve a sustainable development of the agro-food sector, which is closely correlated with environmental protection and

natural resources conservation. The certified organic farming is a new sector in Romania. The number of units/farms applying organic production methods is increasing. The legislation elaborated for this sector, partially being harmonised with community requirements (Council Regulations 2092/91 and 1804/99), intends to create an organic agriculture according to the European system;

- The National Agro-Environment Programme, which will be operational from 2007 – 2013, is under preparation and includes measures for organic agriculture and high natural value areas, is under preparation;
- The Carpathian Convention, which is in the process of ratification in Romania, will provide a good framework for the development of the sustainable agriculture in the Carpathian Mountains at the regional level within the scope of the Article 7 of the Carpathian Convention.

Slovakia

The rural mountain regions are most affected by the negative effects of the transition period. It is improbable that mountain regions will be profitable without state financial support. Inhabitants are faced with many problems, which are due to the past and transition period.

The main challenges for today are:

- Unfavourable economic conditions limiting the development of mountain regions, economic instability of many agricultural holdings, low degree of spatial mobility of workers;
- Unemployment, decrease of workers in agriculture to such an extent that landscape and environment protection is endangered; abandonment of land;
- Unsatisfactory population growth, marginalisation, abandonment of rural regions by qualified people;
- Lack of knowledge and experience concerning fundraising and environmental protection;
- Lack of suitable credit scheme for the rural and mountain regions;
- Insufficient support to small business;
- Deficiency in regional enterprises based on local sources exploitation;
- Environment vulnerability against impact of farmers practice;
- Ineffective exploitation of natural resources with emphasis on renewable energy sources;
- Insufficient technical infrastructure of villages, obsolete technologies and machinery;
- Insufficient protection of the environment against negative influence of farmers' activities. Low level of agriculture from the environment protection point of view and welfare;
- Insufficient closed-cycle technologies.

Despite all that, in the rural mountain regions, there is a high human potential related to cultural and natural heritage, as well as to a long agricultural tradition. It creates **many opportunities** for SARD-M:

- Improvement of business skills and skills of people in fund raising;
- Increase of diversification of activities, support of agro-tourism, services and forestry;
- Improvement of the level of environmental awareness and knowledge;
- Increase of renewable sources utilisation;
- Increase share of organic farming and organic products on the domestic market;
- Increase offer of regional specialities;
- Support of sheep breeding;
- Innovation of machinery;
- Support of co-operation among villages;
- Cultural and natural tradition preservation.

Ukraine

All Carpathian countries, except Ukraine, are in the process of joining the European Union. This offers both challenges and opportunities. The enlargement is a key strategic issue, which has important implications for the political, economic, social and environmental development.

The main challenge and a historical opportunity are to steer these developments in positive future directions, to promote SARD and conservation of biodiversity. Negotiations are well underway, the countries have already started the process of integration of the European legislation into their national policies, and environmental chapters have been already closed for the Ukraine.

The challenge is to increase food production in a sustainable way. There is a need to establish economic incentives fostering the development of appropriate technologies, income diversification, and land conservation methods through improved management techniques. The overall success will depend on the participation of people living in the region. Human resource development must therefore be promoted taking into consideration that information, education, wise planning and participatory approaches are essential.

Low intensity farming and its advantages for nature conservation should be promoted, e.g. organic farming. At present, controlled "environmentally friendly" land-use systems in the Carpathians are limited to a few percent of the agricultural areas. There are, however, considerable potentials for further expanding this sector. Farming would operate according to the principles of organic agriculture, considering the forces of nature and the cyclic approach.

Organic farming is growing rapidly throughout Europe, and in 2001, the Ministers of Agriculture from 12 European countries have called for the creation of a European Action Plan for the development of organic farming and food under the so-called "Copenhagen Declaration".

The existing EU legislation system with guidelines for ecological agriculture could be used for production and processing and for marketing.

The enlargement of the European Union will definitely influence and affect all the countries in the EU. In addition to security and peace, the accession process will provide benefits to Western Europe, for example, adding natural capital to enjoy and safeguard for future generations. There are many opportunities related to this process, e.g. the harmonized legislative framework in the Ukraine. Specific funding instruments are available that can be used for environmental protection and for supporting rural communities. It is a unique chance to channel new investments towards the region due to the transition to a free market economy, trade liberalization and globalization.

While the 'accession' of some Carpathian countries (including Ukraine) to the European Union is welcomed and offers opportunities, there are concerns that certain EU policies and projects may actually worsen threats to the region. It is especially emphasized in the case of the Common Agricultural Policy (CAP) and proposed road networks. There are three main policy sectors of great importance for the Carpathians: nature conservation, agriculture & rural development and water management.

Regarding problems of the agricultural sector and the rural economy in Ukraine, it is worth mentioning, that agriculture and rural development are a complex issue being socially sensitive, but an absolute economic necessity. The EU's Common Agricultural Policy is the most important policy driver affecting the agricultural sector and rural development along with production subsidies and investments in the framework of the CAP reforms. This has led to intensification and specialization in the EU, accompanied by several negative impacts on biodiversity.

Signals from Member States in favor of CAP reform and the greater role given to rural sustainable development are welcomed and urgently necessary to avoid costly and damaging mistakes already made. This will be a major challenge, as the accession process is more or less continuing, but the unsustainable EU model focusing on modernization of agricultural structures and the competitiveness of standardized industry, instead of addressing rural concerns. Often national policies are encouraging intensification of agricultural practices on the one hand and land abandonment on the other.

ANNEXES

ANNEX 1

Article 7

Sustainable agriculture and forestry Framework Convention for the Protection and Sustainable Development of the Carpathian Mountains

1. The Parties shall maintain **the management of land** traditionally cultivated in a sustainable manner, and take appropriate measures in designing and implementing their **agricultural policies**, taking into account the need of the protection of mountain ecosystems and landscapes, the importance of biological diversity, and the specific conditions of mountains as less favoured areas.
2. The Parties shall pursue policies aiming at **developing and designing appropriate instruments**, such as the crucially important **agri-environmental programs in the Carpathians**, enhancing integration of environmental concerns into agricultural policies and land management plans, while taking into account the high ecological importance of Carpathian mountain ecosystems, such as natural and semi-natural grasslands, as part of the ecological networks, landscapes and traditional land-use.
3. The Parties shall pursue policies aiming at promoting and supporting the use of instruments and programs, compatible with internationally agreed principles of **sustainable forest management**.
4. The Parties shall apply **sustainable mountain forest management practices in the Carpathians**, taking into account the multiple functions of forests, the high ecological importance of the Carpathian mountain ecosystems, as well as the less favourable conditions in mountain forests.
5. The Parties shall pursue **policies aiming at designating protected areas** in natural, especially virgin forests in sufficient size and number, with the purpose to restrict or adapt their use according to the objectives of conservation to be achieved.
6. The Parties shall promote **practice of environmentally sound agricultural and forestry measures** assuring appropriate retention of precipitation in the mountains with a view to better prevent flooding and increase safety of life and assets.

ANNEX 2

Administrative units in the Ukrainian part of the Carpathians

Figure 1 Administrative units in the Ukrainian part of the Carpathians

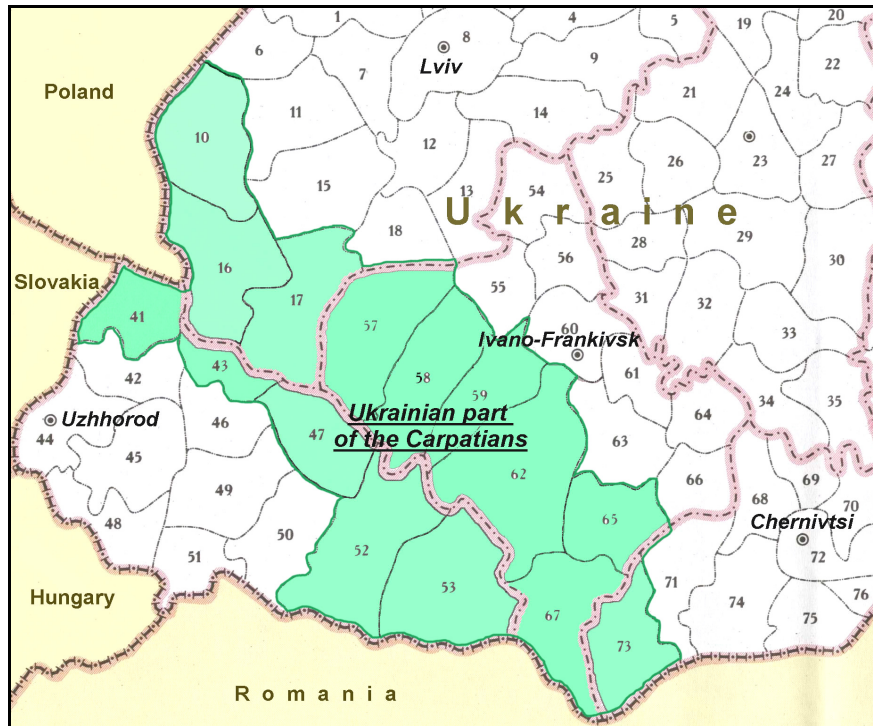


Fig. 1 Administrative units in the Ukrainian part of the Carpathians: 10 – Staryi Sambir, 16 – Turka, 17 – Skole, 41 – Velykyi Bereznyi, 34 – Volovets’, 47 – Mizhhir’ya, 52 – Tyachiv, 53 – Rakhiv, 57 – Dolyna, 58 – Rozhnyativ, 59 – Bohorodchany, 62 – Nadvirna, 63 – Kosiv, 67 – Verkhovyna, 73 – Putyla.

ANNEX 3

Economic efficiency value and production expenditures of farms in the sample mountain districts of Lviv region in the Ukrainian Carpathians

Table 25: Financial results of activity in farms of Lviv region, thousand UAH in prices of 2002

Administrative units	Income (return)		Net cost of sold production	Net		Economic efficiency, %
	total	from selling of agricultural production		income	loss	
Skole	66.2	15.2	69.4	0	3,7	-15.80
Saryi Sambir	115.4	115.4	105.8	14.8	5.6	13.99
Turka	34.7	34.7	15.2	19.5	0	128.29

Table 26: Production expenditures in farms of Lviv region, thousand UAH in prices of 2002

Administrative units	Remuneration of labor	Material inputs	including				
			seeds	fodder	chemical fertilizers	oil products	electricity
Skole	5.1	51.9	0	7.3	0	43.7	0.1
Saryi Sambir	11.2	98.6	16	0	17.6	16.2	20.4
Turka	0	15,2	1.7	3.5	3.0	3.0	1.7

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