

ROMANIA'S MOUNTAIN AREAS - PRESENT AND FUTURE IN THEIR WAY TO A SUSTAINABLE DEVELOPMENT

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Abstract

The paper purpose was to analyze the present situation of the mountain areas in Romania from a socio-demographic, economic and environmental point of view in order to identify the main positive and negative aspects and to establish what objectives and measures have to be considered for assuring the sustainable development of the mountain regions in the coming future. The statistical data provided by Eurostat, FAO, National Institute of Statistics and National Agency for Mountain Areas were statistically processed in their dynamics using trend regression equations, graphical illustration and comparisons. The results pointed out that the Carpathians cover 37.8% of Romania's area and are predominantly rural. The share of the mountain municipalities is just 37.8% (12th position in Europe), the residents account for 5.53 million (6th position) meaning 25% in the total population (11th position), agriculture (mainly animal growing) and forestry are the main activities. In 2021, in the mountain regions there were registered 3,147 producers who carried out 1,164 mountain products, the highest weight belonging to vegetal, dairy and beekeeping products whose sale was assured by 135 Local Gastronomic Points. The contribution of the mountain areas to GDP was Euro 48.7 million, for which Romania came on the 8th position among other European countries. The actual challenges the mountain areas are facing are: the decline and aging of the population, migration of young people to the cities, weak infrastructure, livestock decrease, grasslands degradation, weak promotion of mountain products, lack of connectivity and communication between settlements, a low valorization of the natural and human resources. In consequence, as the Mountain Law provides, it is needed a new approach regarding the development of the mountain economy by valorizing in a more effective way all the resources, paying attention to the diversification of the activities, creating new jobs, stimulating entrepreneurship to increase production (agriculture, forestry, handicrafts etc) and encourage more services (education, medical, cultural, tourism, trade, credit etc), facilities for supporting young people to remain in the localities of origin, improving infrastructure (roads, bridges, houses and village restoration, connectivity to IT and mobile network, digitalization etc), involving both the local authorities and all the residents to intensify their efforts to support the mountain areas in their way to a sustainable development upwards 2030.

Key words: mountain areas, strengths, weaknesses, challenges, sustainable development

INTRODUCTION

Mountain areas are of a special beauty and greatness, grace to their peaks, valleys and depressions, fairy tale landscapes, virgin forests of a large tree and shrub diversity, wild flora and animals, water sources, lakes and glaciers, fantastic rainfalls, fascinating caves, human settlements where people is dealing with agriculture and food manufacturing,

forestry, fishing, handicrafts, tourism and agro-tourism, and the sold products and services ensure a decent income and the living standard to the local population. Therefore, the mountain areas have a vital importance from an economic, social, cultural and environmental point of view [17]. The word "mountain" symbolizes "adventure, escape, challenge and conquest" [43].

In order to encourage sustainable development, United Nations General Assembly have established that mountains deserve to be celebrated due to their role on the Planet. It was designated December 11 as the International Mountain Day. Every year

the celebration of the International mountain Day has a specific topic, and in 2022, the theme is "Women move mountains" [19]. The importance of the mountains areas in the world is reflected in Fig.1.

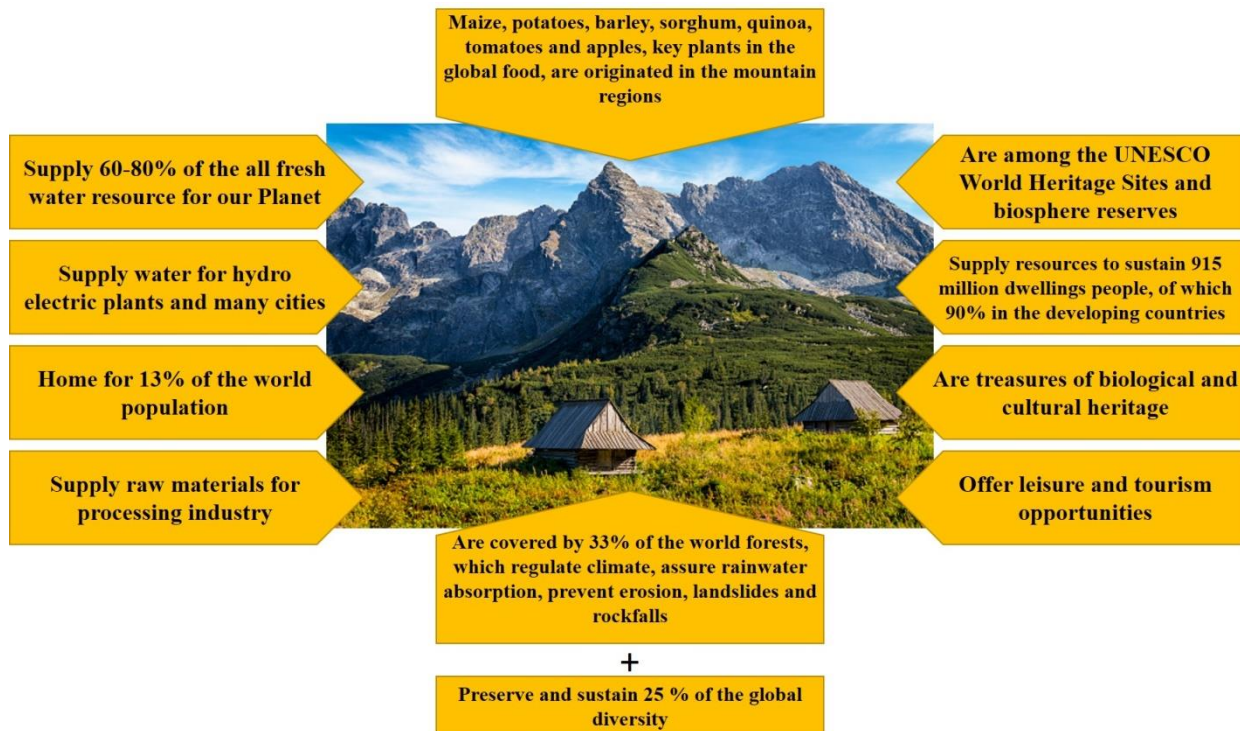


Fig.1. The importance of the mountain areas in the world
 Source: Own design based on [12].



Map 1. Europe's mountain ranges
 Sources: (a) [49] and (b) [16].

Europe has many mountain ranges differently positioned on the map of the continent. They have various dimensions, climate conditions, natural and human resources, and economic development (Map 1).

There are 10 great mountain ranges and up towards 100 small mountains which represent the heritage of the old continent. The largest mountain ranges are the Alps, the Pyrenees, the Carpathians, the Caucasus Mountains, the

Dinaric Alps, the Scandinavians, the Scottish Highlands, the Apennines, the Dolomites and the Balkans [46] (Map 1).

The European countries with the largest surface covered by mountain areas, in the decreasing order are: Spain, Norway, Italy, France, Greece, Iceland, Romania, Austria,

United Kingdom, Bulgaria, Germany and Switzerland. The largest mountains belong to Spain (279,865 km²) and the smallest ones to Liechtenstein (160 km²) (Fig. 2).

The surface of the mountains has a deep impact on air, soil, water quality and also on health and food security and safety.

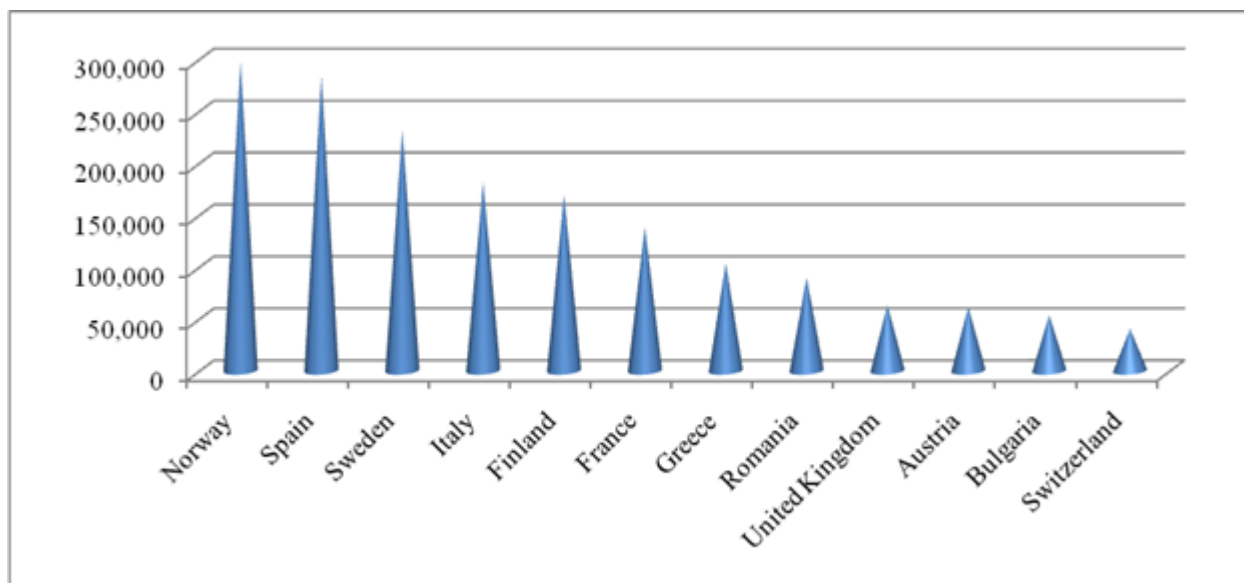


Fig. 2. The main European countries with large mountain areas (km²)
 Source: Own design based on the data from [15].

The most numerous mountain population is in Italy, Spain, France, Germany, Switzerland, Romania, Greece, Austria, Bulgaria, Slovakia, Norway, United Kingdom, Czechia, Poland, and Slovenia. Italy is on the top position for the largest number of residents, more than 18.3 million, in the settlements of the mountain areas.

The European countries with the highest share of population living in the mountain areas are: Switzerland, Slovenia, Norway, Austria, Greece, Slovakia, Bulgaria, Spain, Italy, Portugal, Romania. In Switzerland, 84% of the residents are in the mountain regions, while in Romania about 25%. Lower percentages are also in other countries.

A study made in 29 countries including the EU, Norway and Switzerland pointed out that the mountain municipalities cover 1.9 million km², representing 40.6% of the total area. About 94.3 million inhabitants, accounting for 19.1% of the total population live in the mountain regions, either directly (20%) or at a specific distance ranging between 10 and 50 km from the mountains [39].

The highest share of the mountain municipalities is in the following countries: Switzerland 93.3%, Norway 92%, Slovakia 77%, Greece 77.88%, Austria 73.4%, Italy 60%, Spain 56%, Sweden 51%, Finland 49.4%, Bulgaria 49%, Cyprus 47%, Romania 37.8%, Czechia 32% [15].

The economic activities carried out in the mountain regions have an important contribution to GDP. The highest contribution to GDP in Euro Million, coming from the mountain areas, is given by Italy (753.5), Spain (702.1), France (404.3), Germany (229.3), Austria (183.6), Greece (109.1), United Kingdom (58.8), Romania (48.7), Slovakia (40.4), Portugal (40.2), Slovenia (33.7), Bulgaria (33.5), Czechia (25.5), Poland (20.2), Croatia (10.5) and Belgium (5.2).

Employment rate continues to grow due to the multiple mountain activities and higher attractiveness of entrepreneurship. However, employment rate is raising by different rates from a country to another as follows: Slovakia 12.3%, Spain 11.7%, Bulgaria 11.7%, Greece

11.5%, Slovenia 11.3%, Portugal 10.8%, Czechia 10.4%, Romania 7.2%, Croatia 6.4%, Italy 5.3%, United Kingdom 3.8%, Austria 2.9%, Germany 1.3%.

The mountain areas represent 30% of the EU territory, are home for 57% of the population and contribute by 46% to GVA.

Mountain areas have a high sensitivity to the climate change which causes glaciers melting, huge rainfalls followed by floods, landslides, soil erosion, damages to infrastructure and settlements, financial losses, and also loss of animals and even human lives.

But, the cultural heritage built across the time by the history of the continent is very rich [7].

The big challenges for the mountain areas at present are the depopulation and the lack of enough services.

However, in France, Italy, Germany, Switzerland and Austria, the mountain areas have known the highest economic-development during the last 40 years [34].

In this context, the aim of the paper was to analyze the mountain areas of Romania in order to point out their actual strengths and weaknesses, challenges and needs regarding their future to a sustainable development.

MATERIALS AND METHODS

First of all, the research work needed a documentation regarding the importance of the mountain areas at the world and European level, and in Romania, based on the study of various written materials like Reports of international and national forums, published books and scientific articles.

Secondly, the statistical data have been collected from Eurostat, FAO, and National institute of Statistics, and also from National Agency for the Mountain Areas.

The main aspects approached in this study have been the following ones:

- The importance of the mountain areas for our Planet;
- The main mountain ranges existing in Europe and the position of the Carpathians among them;
- The Carpathians - surface, altitudes, groups of mountains;
- Human settlements and their features;

-Demographic aspects: number of residents and their share in Romania's population, age, education level, migration;

-Infrastructure;

-Mountain economy: (i) agriculture: land use, vegetal and animal growing; (ii) food processing and marketing; (iii) mountain producers, products and local gastronomic points; (iv)forestry, (v)handicrafts, (vi) tourism etc.

-Contribution of the mountain economy to GDP;

-Living standard of the population;

-Environmental aspects;

-Legal framework and administrative bodies.

For each aspect have been identified the main aspects of interest pointing out both the positive and negative aspects and the challenges the mountain areas are facing.

Finally, there were presented the needs and the main direction of development of the mountain regions of Romania to success in their way to a sustainable development from an economic, social, cultural and environmental point of view. The statistical data were processed in their dynamics and the results were presented graphically, in some cases the trend regression equations were used to reflect much better the main tendency.

When analyzing various indicators, comparison method was utilized to evaluate Romania's position among other European countries.

RESULTS AND DISCUSSIONS

"Mountain is not just a part of the Universe, but a un Universe itself" as affirmed by Eugen Barbu, one of the greatest Romanian writers and journalists, correspondent member of the Romanian Academy [31].

Besides the International Mountain Day which is celebrated on December 11 every year since 2003, in Romania, the National Mountain Day is September 14.

The Carpathians of Romania

Romania has 238,391 km² surface, of which 90.39 thousand km² belong to the mountain area, meaning 37.9% of the territory of the country. Romania has the largest mountain range located inside of a country in Europe, and for this reason, Romania is considered a Carpathian country [20].

The Carpathians represent the North-Eastern alpin montaneous system which starts from Vienna basin and keeps upward to the Timoc Valley along of 1,500 km and covering 170,000 km² surface of Europe. On the Romania's territory, their length is 910 km.

Of the 90.38 thousand km² of the Romania's mountains, 35,660.6 km² belong to the Eastern Carpathians (39.3%), 14,653.3 km² (16.1%) the Apuseni Mountains, 39,952 km² (44.2%) the Southern Carpathians, and 131 km² (0.4%) the Macinului Mountains [15] (Map 2).



Map 2. Map of Romania's relief - The Carpathians (Brown color)
Source: [47].

About 90% of their surface is situated at an altitude below 1,500 m, but 85% of their area is over 2,000 m and is situated between the Prahova Valley and the Timis-Cerna aisle.

Romania's relief is like an amphitheater, proportionally disposed including 28% mountains over 800 m, 42% hills and plateaus (200-800 m) and 30 % plains below 200 m.

The Carpathians ring surrounds Transilvania depression and the highest peak is Moldoveanu at 2,544 m altitude in the Fagaras Mountains.

Human settlements

In the mountain areas of Romania, there are 80 cities, 3,560 villages and more than 850,000 traditional households, owning about 3 million ha agricultural land and 4 million ha forests.

In the Carpathians, large areas are predominantly rural areas and just a few localities are classified in the urban category like towns and cities [9].

Romania has just 37.8% share of the mountain municipalities in the total of the country, coming on the 12th position in Europe after Switzerland, Norway, Slovakia, Greece, Austria, Italy, Spain, Sweden, Finland, Bulgaria and Cyprus [15].

The spectacular alpine areas alternate with valleys and intra-Carpathian depressions, where the human settlements could be found even up to 2,000 m altitude [1].

Among of settlements situated at a high altitude, there are mentioned here just a few:

-Maguri Village, Maguri-Racatau Commune, at 45 km from the city of Cluj-Napoca. The small locality ranges between 1,250 to 1,400 m altitude, has a surface of 13,000 ha, 390 houses, and 918 inhabitants. It is an isolated village, the access being very difficult even in summer season [6, 42].

-Predeal, Brasov County, is the city situated at the highest altitude (1,030-1,110 m) and has 58.4 km² surface and 4,755 inhabitants. It is well-known as one of the most beautiful mountain resorts in the Prahova Valley, as it offers tourist routes in summer season and one of the best ski slope in Romania [8].

-Fundata Village, Brasov County, is situated at 1,360 m altitude, being considered a "touristic village" since many decades ago [2].

-Sirnea Village, Brasov County, situated at 1,400 m altitude is also a "touristic village" where tourists may benefit of fresh air, spending their holidays for leisure and short trips, enjoying local traditional food and crafts [48].

-Plesa Village, Suceava County, is situated in North Bucovina, in the proximity of Gura Humorului, and is a specific Polish village [5].

Large surfaces of the Carpathians are predominantly rural, and just a few are classified as towns or cities. Despite than rural areas have important land resources, forests, human capital and tourism opportunities, the gaps between the rural areas and the urban ones has been accentuated due to the economic decline in the rural space.

Demographic aspects

In the mountain areas of Romania there are about 5.53 million inhabitants who are accustomed to live in the mountain conditions

in the small localities either communes, villages or cities. Their share in the total population is 25%. Romania comes on the 6th

position in Europe for the population living in the mountain regions, after Italy, Spain, France, Germany and Switzerland (Fig. 3).

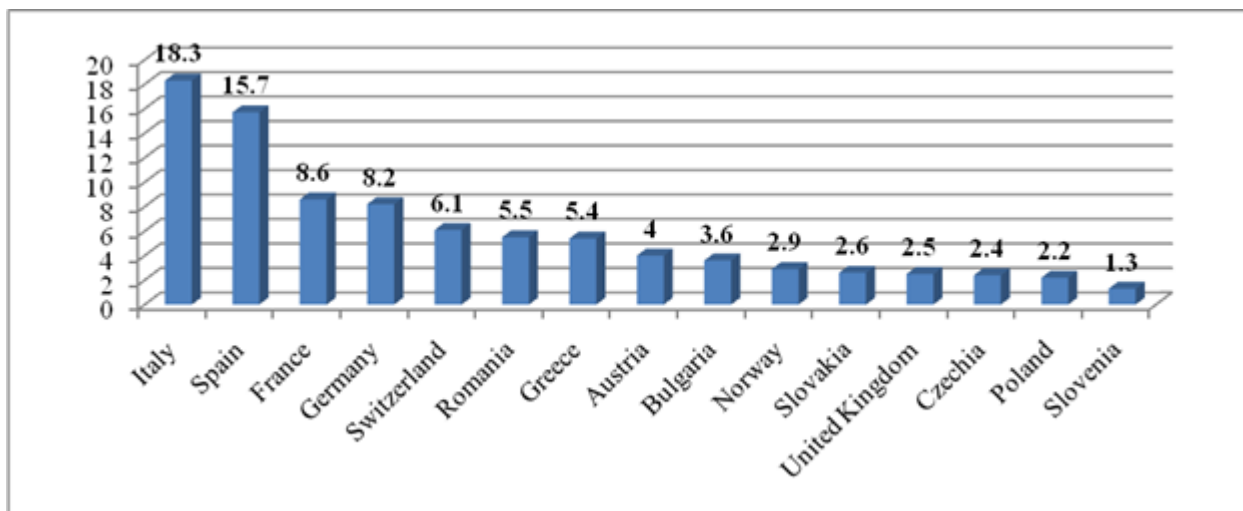


Fig. 3. The European countries with the most numerous population living in the mountain areas (Million)
 Source: Own design based on the data from [15].

Taking into consideration the weight of the inhabitants living in the mountain areas in the total population of the country, Romania comes on the 11th position with 25%, after

Switzerland, Slovenia, Norway, Austria, Greece, Slovakia, Bulgaria, Spain, Italy and Portugal (Fig. 4).

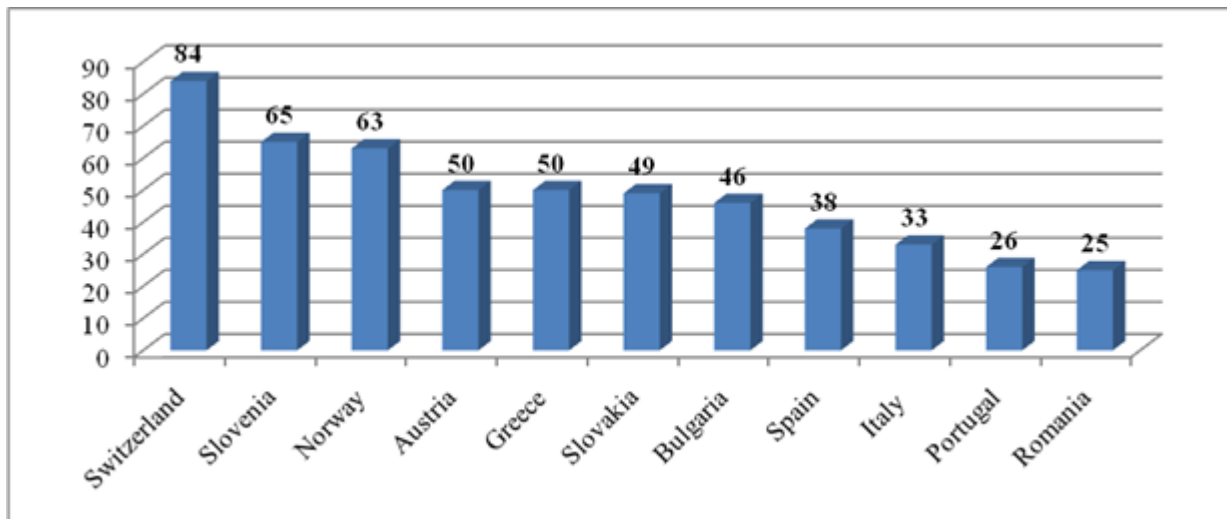


Fig. 4. The European countries with the highest share of population in the mountain areas (%)
 Source: Own design based on the data from [15].

The general features of the population are: aging, the decline of the number of residents, mainly of the young people, low training level reflected by the limited number of schools and their educational level (primary schools, rarely gymnasium level), lack of vocational training, lack of mobility from a locality to another, lack of support for developing entrepreneurship, lack of facilities to

communicate and of physical connections from a settlement to another.

The main reasons why the young people leave their place of origin are: the desire to have a comfortable life style in the urban areas, to look for jobs in the cities or abroad in order to be better paid, to benefit of more opportunities to study (high schools, faculties etc), to have access to a large variety of commercial

services, to be permanently connected to internet and mobile network, to have more options from where to choose a better accommodation, to have access to a large range of cultural and sport events [14].

Infrastructure

In Romania, the mountain infrastructure is of poor quality and the access is difficult, as less than 8% of communal roads and railway network are weak. However, the main transit roads like in the Prahova Valley and the Olt Valley, the Transfagarasan and Transalpina, are better maintained, but the traffic is very intensive, exceeding the road capacity.

In many settlements situated at higher altitudes, there are no electricity, water supply, sewerage, waste collection and processing, transportation means and the digital connectivity is not sufficient or missing.

All these aspects reflect a low living standard of the population and that life and work are difficult in the mountains.

Economic aspects

Agriculture is the key sector developed in the mountain areas, as it provides food for the local households and communities and also sustaining the mountain economy. But, agriculture development is different from a region to another and from a country to another, being high gaps between the European states.

Land is used for cultivation of various agricultural crops (mainly vegetables etc), in most of cases practicing traditional systems, but we could find also abandoned surfaces which determine soil degradation. In small farms, there are raised dairy cows, sheep and goats, a few pigs, and horses for drafting the carriages.

The mountain land fund of Romania includes: pastures and meadows with the highest share: 45.1% and, respectively 33.2%, summing 78.3%, arable land 20% and the remaining represents orchards and nurseries 1.5% and vineyards and nurseries 0.1% (Fig. 5).

Vegetal farming. The farmers are adapted to the specificity of their work in the mountain conditions, large surfaces being on a slope, and the applied technologies are mainly extensive. The wealthier farmers look to be

more interested in small mechanization for working the mountain slopes [13].

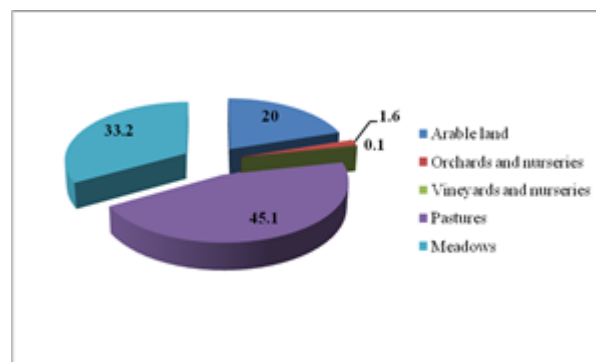


Fig. 5. The structure of land fund in the mountain areas (%)

Source: Own design based on the data from [45].

Animal farming involves grazing with dairy cows, sheep and goats, but in an extensive way, rarely in an organized grazing system based on animal rotation on parcels of optimal dimension correlated with food requirements and the regeneration capacity of the grass. The grassland yield depends on the mountain area, climate, soil quality, floristic composition, and maintenance works. Scientific research has put at the farmers' disposal specific solutions for increasing grassland productivity in different mountain areas [23, 24, 25, 26, 27, 28, 33].

Romania's mountain areas have a rich fund of pastures and meadows. Pastures cover 3.27 million ha (13.7%), and hayfields cover 1.55 million ha (6.5%) [30].

In the mountain livestock has registered a continuous declining trend due to the discriminatory subsidy offered in the year 2007 only to the farmers raising more than 50 sheep, and which in the year 2013 has been allotted only to the farmers growing over 150 sheep.

The decrease in the livestock has led to the reduction of organic fertilizer (manure), to a disturbance in the floristic composition of the grasslands and in consequence to the decline of their grass productivity and implicitly of animal production [40].

The pastoralism has changed in the last decades and transhumance represents just 10% of the sheep flock and is made especially to the plain areas [4].

In other countries, the agriculturists receive a specific support like: investment aids for farming, direct payments, support for maintaining the grasslands, facilities for improving technical endowment, support for organic farming etc.

Compared to other countries, the small support offered to farmers in the mountain areas in Romania reflects that these regions are strongly marginalized compared to the plain and hilly areas.

Food processing is mainly oriented to the obtaining of specific traditional products, using preserved technologies and good practices to achieve local products. The main mountain products are: dairy products (milk, cheese made of cow, sheep or goat milk or a mixed milk), eggs, meat products (especially salted meat sorts), various types vegetable products (vegetables as such, canned vegetable mix), jams made of fruit forests and other fruits, natural juices, wines, plum brandy (tzuica), bee products (honey, polen, royal jelly etc.), bread, bakery and pastries products. Their sorts are determined by the geographical position, soil fertility, climate conditions, local traditions. The mountain products are natural and healthy food, delicious, with a specific flavor, and many of them are already certified.

Food processing is stimulated by the development of tourism and agro-tourism in the mountain areas.

Mountain product and its market is for the moment at the beginning. The local producers have an inadequate access to market where to sell their products. Advertising is weak and not efficient, the marketing tools are pale. Products are sold locally, mainly to tourists who visit the locality.

Mountain product is of a different quality compared to other products. It is a natural product as it is obtained either in an extensive system of agriculture with low chemical inputs, or in organic farming or is a traditional product.

Therefore, it is a healthy product as it is made of local raw materials, processed using specific local recipes and in private units existing in the mountain settlements.

It has a good correlation between its high nutritive and hygienic quality and sale price.

Mountain products are among consumers' preferences and that is way tourism and agro-tourism in the mountain regions has been intensify during the last decade [37].

In the period 2017-2021, in the mountain areas there were registered 1,164 producers, of which most of them meaning 509 (43.7%) were dealing with vegetable products, 446 (38.3%) were profiled on milk and dairy products, 162 (13.9%) on beekeeping products, 25(2.1%) on meat and meat preparations, 9 (0.7%) on fish and fish preparations, 9 (0.7%) on eggs and 4 (0.3%) on bakery, pastries etc (Fig. 6).

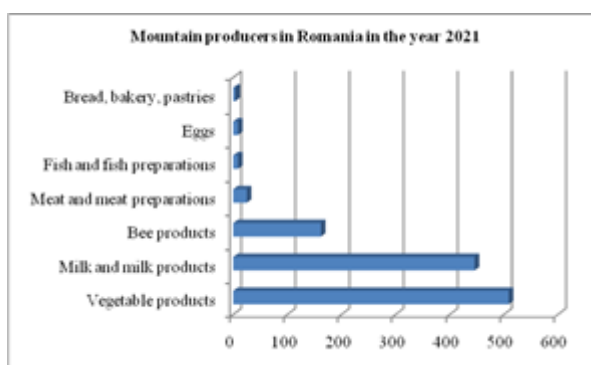


Fig. 6. Mountain producers in the year 2021
Source: Own design based on the data from [30].

Also, in the same period 2017-2021, in the mountain areas were carried out 3,147 "mountain products", of which: 1,695 made of vegetables (53.8%), 936 milk and dairy products (29.7%), 398 bee products (12.6%), 80 products made of meat (2.5%), 25 products made of fish (9.8%), 9 eggs (0.3%), 4 products from the category bakery etc (0.1%) (Fig. 7).

However, during the period 2018-2021, more and more "Local Gastronomic Points" (LGP) have been created as "authorized units represented by private kitchens situated inside the rural dwellings where food is prepared using culinary recipes specific to the area and destined to be served to maximum 12 consumers.

They have to use raw materials achieved in the own farm and from the local producers or authorized and registered sanitary-veterinary and for food safety" [3].

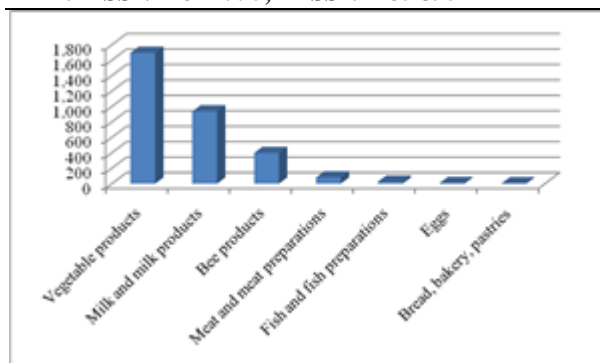


Fig. 7. Mountain products registered in the period 2017-2021

Source: Own design based on the data from [30].

At the national level, in the year 2021, their number accounted for 186 LGP, of which 135 LGP belonged to the mountain areas.

Their purpose is to sustain mountain producers to sell their products and to get the

return for their work and to maintain the gastronomic traditions locally [30] (Fig. 8).

Forestry is another important economic sector in the mountain areas as it is the habitat for the wild animals, offers protection against natural hazards, assures fresh air, stimulate tourism and relaxation, offers benefits for health, maintains the landscapes value, produce a large variety of forest fruits and hunting opportunities. However, in Romania, forestry is facing huge problems related to the deforestation, with the relatively weak and low efficient means of mechanization, many natural disasters (mainly fires, but also pollution and predators' attack).

Romania's forests are the largest and the best preserved forests in Europe.

Forests represent 6.73 million ha, representing 28.2% of Romania's territory [32].

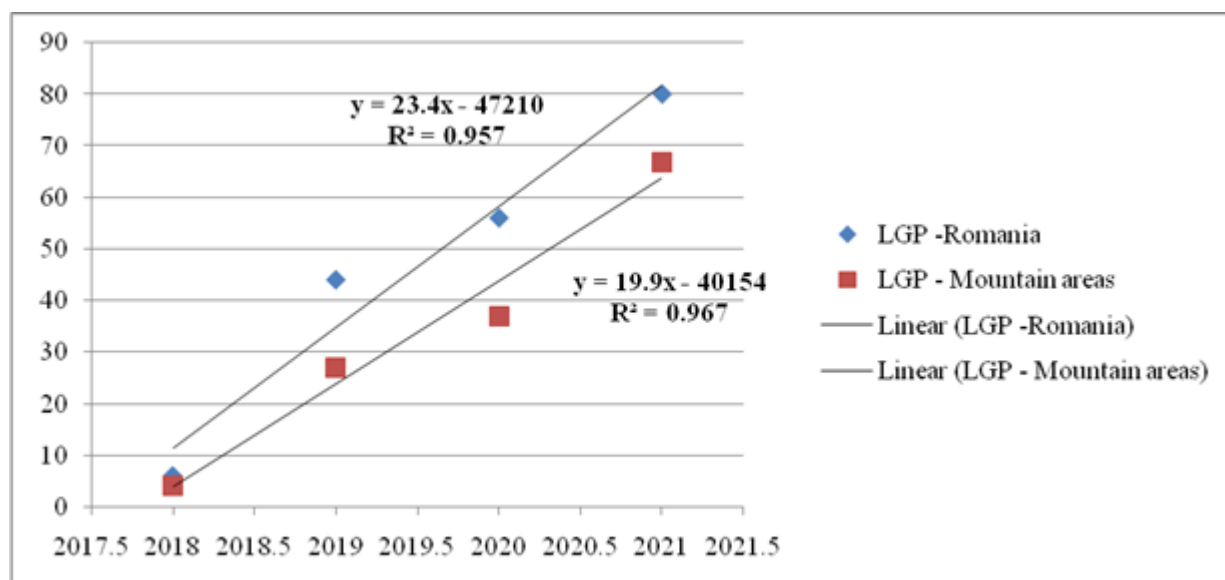


Fig. 8. Dynamics of Local Gastronomic Points (LGP) in Romania and in the mountain areas in the period 2018-2021
 Source: Own design and results based on the data from [30].

The vegetation structure includes about 200 species of trees and over 1,200 herbaceous plant species and in addition fungi, mosses, lichens, algae. This species are found in different zones depending on the mountain altitude. Each species plays its specific role and its value in the whole forest ecosystem. If a species disappears from the system, the whole forest balance is affected and compromise the all the other species.

Forests are names "the lungs of the Planet", and this is the reason why we have to protect

forests and maintain the pure air which entertain life!

A few residents of the mountain areas are dealing with wood industry which means: tree cuttings, transportation, processing, selling the final products: wood, forest fruits, ornamental trees, Christmas trees, hunting products, fishes etc.

This job brings income to sustain a part of the population living in the mountain areas [21].

Tourism in its various forms: rural tourism, eco-tourism, agro-tourism, cultural tourism, sport tourism (skiing, kayaking, rafting etc),

religious tourism, health tourism, adventure tourism, recreational tourism, walking, hiking, biking, fishing, hunting, bird watching etc is a "mouth" of fresh air for the mountain economy helping the residents to get additional incomes from offering services of accommodation and board to visitors [35, 36, 41].

The rural mountain tourism is more and more preferred by Romanian tourists as a way to run away from the stressing urban life and artificial food, and to spend their week-ends and vacations in a pictures landscape and enjoying fresh air and delicious traditional and natural local gastronomy [22].

Handicrafts and other traditional activities are encouraged to valorize the human resources and local traditions.

Services in the mountain areas are not so well developed. It is about education, medical centers, sanitary-veterinary centers, extension, transportation and commercial services, IT communication, energy, tourism etc.

Small processing industry is represented by textile production, wood processing, pharmaceuticals and leaver goods.

Living conditions in the mountain areas

In many cases, the living standard in the mountain areas is lower than in the cities and towns, because of many reasons: the poor infrastructure in villages and communes, lack

or low income per family, the low facilities existing in the mountain dwellings. Many house are not well maintained and are degraded or abandoned especially in the isolated regions. The localities are lacked of basic services (school, medical point, bank service, transport, cultural forum etc)

Environment

In general, the mountain environment is pleasant and clean, but the human activities like: farming, forestry etc could affect the natural landscapes and could pollute land or diminish agricultural surface, and even leaving the land abandoned.

Erosion, landslides, rockfalls, floods etc produce huge damages to the local communities, destroy dwellings, gardens, kill humans and animals, affect infrastructure, diminish the balance of the eco-systems and the beauty of the landscapes.

Romanian mountains are a treasure of wilderness, including national parks and natural parks, and also protected areas like natural scientific reservations, nature monuments, forestry reserves.

Contribution to GDP

Romania comes on the 8th position with Euro 48.7 Million contribution coming from the mountain areas to GDP, after Italy, Spain, France, Germany, Austria, Greece and United Kingdom [15] (Fig. 9).

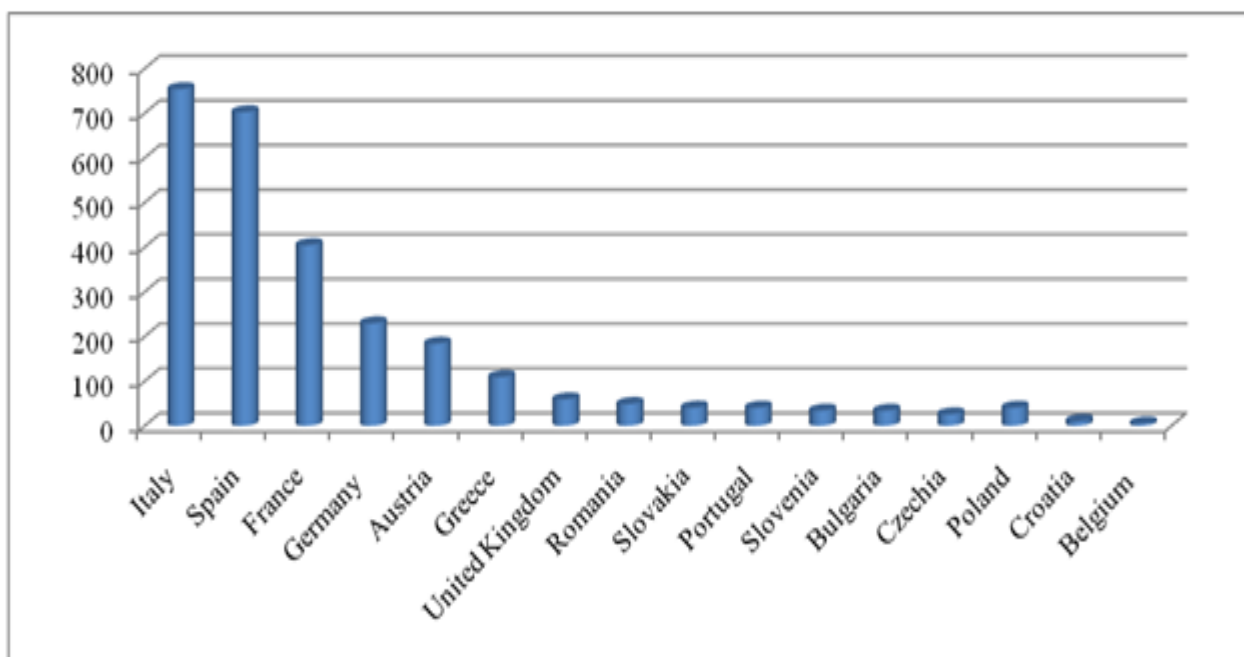


Fig. 9. The European countries with the highest contribution to GSP coming from the mountain areas (Euro Billion)
 Source: Own design based on the data from [15].

Legal framework and administrative bodies

The basis of the Mountain Law in Romania was set up in the year 1994, taking into account the criteria to which Switzerland, Italy, France and Austria adhered. At the beginning, the law project had limitations regarding the mountain areas and the delimitations of these regions were officially revised by EC Regulation 1257/1999 and approved by Order of the Minister of Agriculture, Forests and Rural Development No.328/18 May 2004, according to the Decision No.949/2002 drawn by Romanian Government [11].

Other important EU regulations are 1151/2012 regarding the quality schemes for agricultural products and foodstuffs [18] and EC Regulation No.665/2014 concerning the conditions of use of the optional quality term "mountain product"[10].

The Romanian Parliament has approved the Law 197/20 July 2018, which is the Mountain Law, and was published in the Official Gazette No.659/30 July 2018 [38]. This law regulates the ways to protect and assure the sustainable and inclusive development of the mountain area by: valuing the natural and human resources, increasing the living standard, stabilizing the population, maintaining the cultural identity, increasing the economic power locally and nationally under the condition of the maintenance of the ecologic balance and the protection of the natural environment EC Regulation No.665/2014 concerning the conditions of use of the optional quality term "mountain product"[10].

According to this law, Romania, together with Austria, Bulgaria, France, Italy, Poland, Spain and Switzerland is a country with delimitations and specific mountain law.

Also, this law stipulates that for setting up the strategies for the development and protection of the mountain area, a National Agency of the Mountain Area was established. This agency has regional centers of mountain development and also offices of mountain development at the basins level.

For each group of mountains there were established Committees of Massifs with a

consultative role at the territorial level, and also the National Council of the Mountain which is also a consultative body with the task to assure the link between the Romanian Government and the representatives of the mountain areas regarding the strategies and policies specific to the area.

Order No. 174/2021 of the MARD defines the mountain product as "a product achieved of raw materials provided by the mountain areas, the forages for animal nutrition also come from the mountain regions and the processed products are made in the mountain areas and destined to human consumption" [29].

Specific objectives for the sustainable development of the mountain areas

As provided by the Mountain Law and National Program of Rural Development 2021-2027, there are important objectives of the future strategy and measures which have to be taken in order to continue the sustainable and inclusive development of the mountain regions by sustaining mountain economy so that the local population to be involved in the specific economic activities, which preserve traditions, cultural identity and heritage, maintain biodiversity and the beauty of the landscapes, increase the attractiveness of the regions and life quality.

-First of all the improvement of infrastructure: roads, ways of communication, dwellings etc, water supply, sewerage collection and use, waste management, assuring electricity and gas, internet access and phone communication network in broadband, work digitalization, facilities for the access to education by rehabilitating the schools and gymnasiums, creating medical and sanitary points, consolidation of the infrastructure which has to assure protection against erosion, landslides, floods; also, irrigation systems for agriculture, water drainage systems, improvement of sport and leisure infrastructure, investments in isolated chalets, ski slopes etc.

-Identification of the economic activities which have to stimulate young people to develop entrepreneurship by creating vocational schools, training and extension centers profiled on mountain economy, new jobs.

-For farmers, there are provided facilities for grazing and transhumance, differentiated payments depending on the altitude difficulties in the mountain areas, subsidies for investments for modernizing the farms, credits with low interest rate, endowments for centers for animal reproduction and selection, improvement of the animal production potential, organizing fairs and exhibitions locally.

-Stimulating the creation of associative forms like associations and cooperatives in order to assure the needed inputs, to increase production, and better promote the mountain products, facilities for improving grasslands and their productivity, creating centers for collecting, processing milk, meat, wool, wood etc, storage of the products, and certification for the "mountain products", "traditional product" and "organic products".

-Special measures are destined to encourage the young farmers who grow more than 5 LU (livestock units) will be exempted to pay the taxes for a period of 5 years and 50% of incomes for the next period. The young people will benefit of training, advising, and vocational training.

-Tourism will be encouraged by facilities to improve the access to tourist destinations, to enlarge the accommodation capacity and facilities and improve service quality, to restore the historical heritage.

- The specialists, doctors and professors who would apply to work for minimum 5 years in the mountain areas will benefit of an installation premium and financial aid to buy a dwelling.

-Diversification of the local economy by creating new jobs for collecting forest fruits, medicinal plants, mushrooms, tourism, agro-tourism and eco-tourism facilities, traditional handicrafts, medical, social, sanitary-veterinary, trade, transport, information technology, energy services etc.

-The promotion of the local mountain products has to be intensified to sustain the small and medium business, specific to processing industry and services.

-The urban mountain area will be encouraged to make innovations and restorations for improving the attractiveness of the sceneries,

villages, houses, gardens, historical and cultural places. Also, local markets where the local producers to sell their mountain products will also be organized.

- Valorizing the natural and cultural heritage of the villages, preserving the local traditional architecture, art and traditions, cultural and natural heritage and creating centers for tourism promotion and promotion of mountain traditional values.

-Diversifying the mountain products and their commercialization as „mountain products”, "traditional products" and "organic products" using short supply chain.

- Compensatory payments will be allotted for mountain areas facing natural or specific constrains.

-Promoting the extensive agricultural practices with reduce impact for environment by agri-environment payments and organic farming for ensuring environment protection and biodiversity preservation

- Increasing the attractiveness of mountain area by creating local brands.

-Encouraging the initiatives based on innovation and cooperation

-In the field of forestry, it is provided afforestation, a better use of forests, measures for forest protection, support for planting new forest, preservation of the indigenous species, expanding the forest with protection role, taking prevention measures against natural damages, improvement of wood management.

-To improve the living standard of the local population, in the mountain areas will be created new jobs by the diversification of the activities, with a deep impact on income sources, reduction of taxes and payments for young people will contribute to the reduction of their migration to cities.

To assure the sustainable development of the mountain areas it is needed to gather all the forces, initiatives, good practices and to spread them in the mountain territory.

An essential role in the sustainable development of the mountain areas in Romania will have the Center of Mountain Economy in Vatra Dornei, where the last results obtained in the scientific research will be disseminated in practice for improving the productivity of the mountain farms, for

improving their competitiveness and diminishing the effects of the climate change and for offering more natural and healthy mountain products to consumers and contributing to food safety and security. Within the training center it will be organized training courses for enabling the local population to develop small business and be aware of its role in the development of the communities to which they belong.

Mountains should become an inexhaustible and renewable resource of water, food, energy by carbon absorption.

In this respect, the XIIth European Mountain Convention Euromontana, co-organized with Cia-Agricoltori Italiani in Camigliatello, Sila National Park, Calabria, Italy on October 25-27, 2022 had the topic "Smart mountains: how to make our territories attractive and future-oriented?" and on this occasion there were made recommendations and launched the ideas to build "Smart Mountain for 2050" [44].

CONCLUSIONS

The mountain areas have surpass the challenges regarding the depopulation, migration of the young people, the decline in animal livestock, low income and living standard of the residents by a new vision and strategy which has to ensure the sustainable development of the mountainous regions.

Mountain economy has be strengthen and offer stability to rural population and a decent living, a high and effective valorization of the natural and human resources and cultural heritage, at the same time ensuring the biodiversity preservation and environment protection.

Mountain products have to be promoted due to their special qualities which sustain life and meet the best consumers' preferences for natural and healthy products.

The extend of organic farming in the mountain areas will satisfy the market requirements with high quality products.

The engine of the mountain economy is animal farming where investments are required and viable solutions for improving grasslands productivity, animal production

potential, the range of mountain products, their marketing, maintaining the local traditions, environment quality and improving the living standard of the local population.

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