

PAPER

Sustainability Analysis of the Mountain Economy

Otilia Manta^{1,2}✉

¹Romanian Academy, "Victor Slăvescu" Centre for Financial and Monetary Research, Bucharest, Romania

²Mountain Economy Center CE-MONT, Vatra Dornei, Romania

otilia.manta@rgic.ro

ABSTRACT

The paper presents a vision for the future of Horizon 2050 and the sustainable effect of the mountain economy starting from the conceptual definition of montanology that "integrates knowledge (disciplines) in the following fields: agriculture, animal husbandry, human ecology, geo-ecology and pedology, biology, demography and ethnography, human and animal psychology, architecture, construction and building materials, elements of forestry and geology, beekeeping, fish farming, economics, organization and functioning of the mountain private household, as well as other specific systems, mountain systematization, mountain design, specific ergonomics, small industry and crafts, tourism and agrotourism, health education, nature material resources (minerals, plants and animals) and energy resources (unconventional), legislation and legal relations, other useful knowledge with mountain specifics, human resources, tradition and culture" (R. Rey, 1985). Moreover, we intend to highlight in the paper the challenges and priorities at national and European level in the mountain economy. The results of the paper highlight integrated and transposed SDG [26] solutions, all of which are based on strategic guidelines with practical applicability, following the professional experiences of the author of the paper.

KEYWORDS

mountain economy, sustainable development, SDG

1 INTRODUCTION

The current national and global challenges for the mountain economy are many in the context of the current multi-crisis, as well as in the context of the long-term strategic guidelines of the European Green Agreement 2050. At the same time, there is a need for sustainable mountain rural development, through which all those who live and do business in the mountain areas can benefit from a fair policy for the valorization of products from the many area and support programs that meet the real needs of farmers in small and medium-sized mountain communities.

The year 2014 was declared by the UN as the International Year of the Family Farm, due to the importance of these farms in sustainable development. "By deciding to celebrate this year, we show that we are aware that family farmers are the main

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drivers of the double emergency response facing the world today: improving food security and conserving natural resources, in line with the Millennium SDG, with the debate on the 2030 Development Agenda and the challenge of Zero Hunger,” as stated Jose Graziano da Silva, Director FAO, in New York, November 22th, 2014.

In many developed countries, the family farm is considered to be the basic unit in agriculture (especially in the mountains) and the one that ensures the continuity of rural traditions, although the economic, ecological, and social role of these entities is evolving, being closely correlated mainly with the technological development of the agricultural sectors and in general with the evolution of the society.

2 LITERATURE REVIEW

Economic activities with mountain specificities are very necessary for life in the mountain area, not only from economic considerations, but especially from the point of view of social, cultural, and other elements, all of which contribute to the development of villages in the mountain area as a whole. In recent years, scientific research activity in the mountain area has led to special themes oriented towards this objective of sustainable mountain development. It is worth noting that due to the limited conditions for economic development (with many areas vulnerable to harsh conditions), the productivity in mountain farms can be approximately 30% compared with the productivity of farms in the plains area, and the growth support tools for increasing productivity for mountain farms is limited. We believe that the farmers’ responsibility for sustained growth is limited by these considerations [27].

A clear inventory of these mountain resources could constitute support for their optimal management, and with rigorous management [6], these resources can be better exploited both for local needs and also with global impact.

The World Mountain Forum, an initiative of the United Nations, marked a new era in the sustainable development of mountains with all the resources they have (human, natural, biodiversity resources, and others) and helped establish priorities of government policies at the global level. With the organization of the World Summit for Sustainable Development, Johannesburg [27] in 2002, Chapter 13, Agenda 21, Sustainable Mountain Development recognized supporting the Mountain Development Implementation Plan.

Another initiative at the global level was the World Association of Mountain Peoples (AMPM), which in 2002, in Quito, Ecuador, created the World Charter of Mountain Peoples, which brings to the fore a global picture of the future of mountain areas.

At the European level, the nongovernmental organization Euro Montana and the European Association of the Chosen Mountains have actively supported the mountain population of Europe through their proposals.

The year 2002 was also the International Year of the Mountain, as designated by the UN, which completed many initiatives in support of the existing Mountain Partnership at the international level, Romania being the 33rd member state of this partnership.

Among the policies and programs supporting the mountain area, several reports have been generated by the European Parliament, such as the Ebner Report [28] and the Jitova Report (2016) [28]. From these reports it is clear that a common policy related to mountain areas must be supported at the European level and harmonized by the member states through the convergence towards a common and prioritized agenda, and which should include themes such as the depopulation of mountain villages in the southeast Europe. E. Schwarlzer, the President of the Vorlberg-Austria

Farmers' Association, has argued in his speeches that “the need to continue mountain agriculture and the existence of mountain populations is indisputable” as well as the fact that “in order not to destroy what we have, we need flexibility and much respect.”

Another document that supports the mountain economy is the European Charter for quality mountain food [22], to which Romania contributed (ANZM/FMR) [2]. Moreover, within this strategic document, efficient and effective models for the sustainable development of the mountain economy at the European level are provided.

Mountain Law no. 197/2018 [25] is the document that regulates the sustainable action plan at the national level in Romania. This law provides for investments at the level of the mountain area.

In 2020, Commission President Ursula von der Leyen sent CEMONT an official address “on a long-term vision for rural areas to be prepared by the first half of 2021: the vision will be to support rural areas—including mountains—in realizing their potential as well as considering their own challenges and opportunities.”

The year 2021 was the year in which the European Green Deal [18] was promoted and when programs regarding the transition to a climate-neutral economy until 2050 were financially supported, with a strategic orientation towards small farms, these having a significant impact on biodiversity [6, 23].

In a bibliometric analysis of the scientific works by experts in the field of mountain economy, particularly the mountain tourism subsector, the most important works indexed in WoS were from China and the United States [31]. Among the activities specific to the mountain area, tourism with all the supporting activities, represents the most prominent sector in the rural mountain economy [31, 32, 33]. It is also noted that local products from the mountain area offer a high level of quality and nutrition [34], which adds value to tourism in agro-mountain area. Therefore, we can affirm that while the mountain area was traditionally not differentiated from hill and plain areas, it now does have legislation, strategies, and financial-support programs in a differentiated way and with local specificities [34]. It is worth noting that the mountain economy, with its specific ecosystem and biodiversity, actively contributes to the development of the national economy and the European economy [35].

3 MATERIALS AND METHODS

Our study is based on the scientific literature highlighted in empirical research from the existing databases at the level of research institutes within the Romanian Academy, as well as those existing at the governmental level. Moreover, from the open sources, we can mention the scientific database MDPI, Clarivate, Scopus, and other existing databases at the level of international research. Moreover, considering the existing funding programs at the level of the European Union, we also used the programs mentioned at the level of the European Commission as a source of research. Regarding the working hypotheses outlined in our paper in order to be able to structure the research results, we focused on the following:

1. The first hypothesis is given by highlighting the documents and strategic decisions that support the development of the mountain economy;
2. The second working hypothesis is oriented toward the existence of economic models of good practice in the mountain area;
3. The third hypothesis is given by the financing programs, regulations in force, and action plan regarding the sustainable development of the mountain economy.

Therefore, through our documentation of the existing empirical research, we try to identify answers to the structured working hypotheses and to support both through this work as well as through future research, specific models for the sustainable development of the mountain economy.

4 RESULTS AND DISCUSSION

Europe's mountains can be characterized by multiple needs, from infrastructure and digitization to the great problem of depopulation, which require the construction of a model based on the process of social, financial, and economic inclusion. Knowing these specific needs, in 2020 the European Commission supported a package of strategic priorities with direct involvement on the mountain economy as “a new impetus for European democracy” [6]. The funding programs have been structured and based on the specific analyses of local needs outlined in the Multiannual Financial Framework 2021–2027, as well as on the long-term strategic vision of many in Europe.

Consultation at the European level with representatives from the Member States (2326 respondents)—which is important not only to reflect the current real situation, but especially to reflect on current proposals under the CAP—resulted in the following objectives:

- Assessment of the current needs related to the mountain regions and according to certain criteria specific to the area, such as those related to the specific economic activities as well as the cultural and craft specificities of the area.
- Identifying solutions and proposals for the strategic development of the mountain economy and with local specificities, as well as forecasting strategic development with elements of dynamism specific to future sustainable development.
- Identifying and centralizing the most relevant opinions regarding social and mountain governance, as well as the involvement of local factors in public decision-making with direct implications on local communities and with a long-term vision.

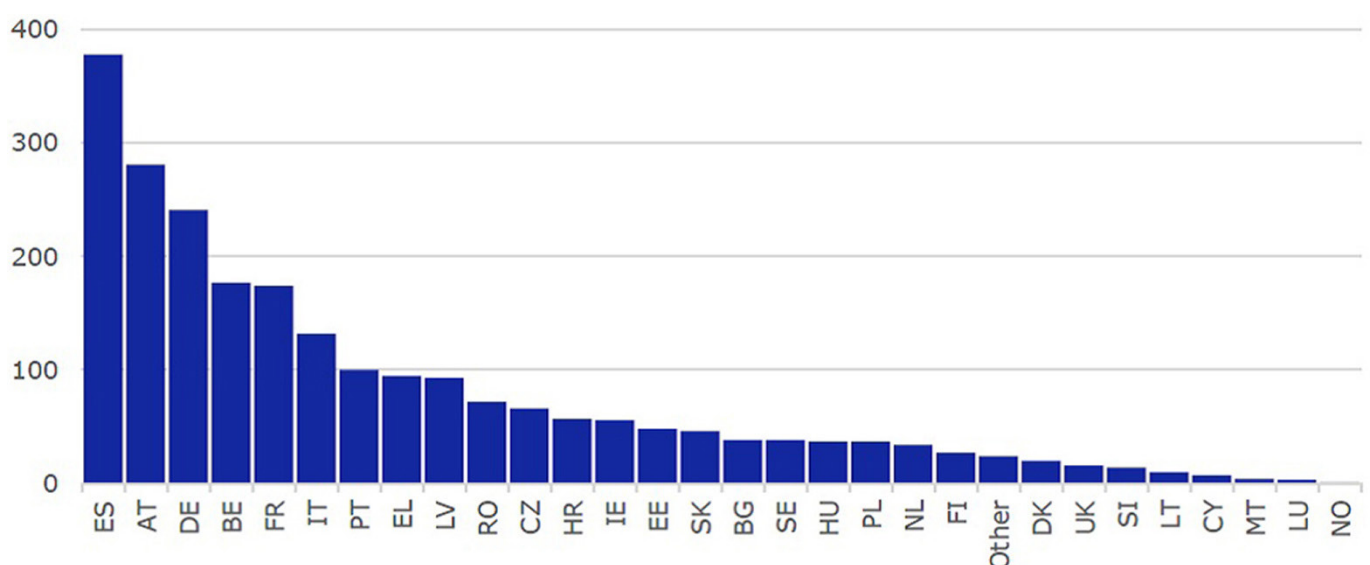


Fig. 1. Distribution of respondents of each member state of the European Union regarding rural development (including the mountain area)
Source: European Commission, 2020.

In the answers identified by the participants in the survey carried out at the level of the European Union member states, 62% represented the population living in the rural area of the European mountain ranges (of which 52% of the citizens lived in urbanized areas in the mountainous countryside, and 9% of them lived in more remote/isolated areas in mountainous regions). Moreover, the respondents were identified according to the sectors of activity in which they are involved: 9% small and medium-sized companies and professional and cultural associations, 5% educational and research institutions, 9% local public institutions, 7% non-profit organizations, 5% rural development networks, and 2% other categories.

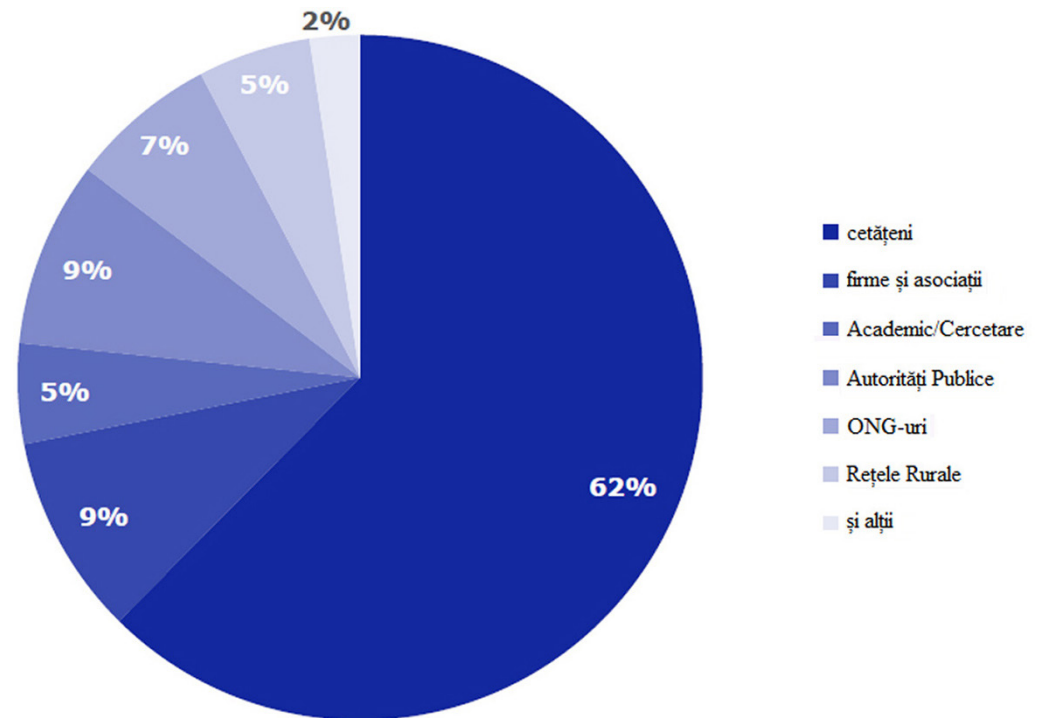


Fig. 2. The main sectors of activity of surveyed respondents

Source: European Commission, 2020.

4.1 Identification of priority needs for areas in the rural environment (including mountain) at the level of the member states of the European Union

In the survey, the respondents actively participated in identifying the urgent needs that the rural population (including the mountainous massif area) is currently facing. More than 50% of those interviewed brought to the forefront the issue of physical and digital infrastructure, as well as the need for a strategic plan to optimize transport services in these areas (including the most difficult to access). At the same time, a percentage of 43% of those interviewed specified the fact that in these areas there is a lack of basic services (e.g., medical offices, centers to support the elderly) as well as vital public services such as electricity, water supply water, sanitation services, financial services, and postal services, which would raise the standard of living and education in these areas. Of those interviewed, 42% appreciate that economic activities are not present and adequate to local needs in rural areas (including mountain ones).

Another remarkable element of the study is given by the main reasons that support an individual's option to stay in or move from the city to the village (including to a mountain area).

A percentage of 94% of those interviewed appreciated that the most important reasons for living in the village (in the mountains) are a high degree of quality of life and an unpolluted or less polluted environment, as well as the contact with nature that gives them balance and a level of lower stress. Another important reason given—undoubtedly affected by the current context of the possibilities offered by digital—was the possibility of remote work, which, was cited by approximately 80% of respondents. A full 75% of favorable answers were given by respondents regarding access to local products and the lower cost of living in the village compared with the city. Also, among the reasons with high percentages was 73% of those citing belonging to a community with a set of local cultural values.

4.2 Reasons to stay or settle in a rural area (including mountain)

For 94% of the respondents, the two most important reasons to decide to live in a rural area were “better quality of life” (72% very important and 22% important) and “less polluted environment, less thermal stress, closeness to nature” (75% very important and 20% important). The third most important reason (80% of responses) was the availability of “business opportunities due to digital infrastructure that facilitates remote work” (54% very important and 26% important). About three quarters of respondents considered “availability and affordability of locally produced food” and “lower cost of living than in urban/intermediate areas” as important reasons (with 75% and 71%, respectively, as very important and important answers). “A sense of belonging to a local culture and/or a set of values” was also an important reason for 73% of the participants in the consultation (41% very important and 32% important).

4.3 The relative importance of rural economic sectors

“Agriculture and the mountain economy” was perceived as the most important sector by 93% of participants (74% very important and 19% important). “Agri-food sector (including processing of primary products)” was considered the second most important sector (61% very important and 29% important). “Local retail and other basic services (e.g., shops, pharmacies, etc.)” ranked third (59% very important and 32% important).

4.4 The contribution of agriculture in rural areas (including mountains)

With over 90% of responses, the two most important contributions were “ensuring access to quality food at affordable prices” (65% very important and 29% important) and “providing jobs in the food processing industry, more bio-economy tourism and tourism” (64% very important and 32% important). The contribution to “other economic sectors” was also recognized as an important contribution for 91% of respondents (47% very important and 44% important). “Agriculture shapes and maintains the rural landscape and protects natural resources” was important for 84% of respondents (57% very important and 27% important). That agriculture also contributes to “maintaining populated rural areas” was important for 86% of participants (50% very important and 36% important).

4.5 The national mountain economy

In addition to the data presented in recent studies at the European level, there are also specific needs at the national level in the mountain area. These needs, which have a direct impact on the sustainability of the mountain economy, include the following:

- **From an economic point of view:** According to studies and analyses carried out by CE-MONT researchers, small and medium-sized households (farms) characteristic of the Romanian mountains cannot and will not be able to cope with the pressure of large food industries, which impose unfair, noncompetitive prices for milk, meat, and other valuable mountain raw materials, with the effect of agricultural abandonment expected to become, more and more accentuated;
- **From a social point of view:** The current population of active farmers, mostly aged, will show a marked weakening of work capacity in a hostile environment where physical exertion is a condition for survival. The tendency for the mountain youth is to *start* and but to *stay* in the villages and not to continue with agro-zootechnical activities.
- **From the point of view of the environment and biodiversity:** According to CE-MONT studies, the use of organic fertilizers, without which there can be no efficient and sustainable mountain agriculture, is diminishing as the number of animals is reduced. Manure platforms and ponds are missing slurry collectors in the stables, and thus not only is a large resource of organic nitrogens lost, but there is increased pollution of the groundwater, leading to a poor state of hygiene, which affects the health of animals and farmers, thus further reducing milk and meat production. Hay collected in traditional haystacks is increasingly exposed to mold, with the risk of aflatoxins in the milk. Haystacks on hayfields exist only in a few counties in Romania (Neamț, Suceava, and Maramureș, and only rarely in other counties); small and family farms, once a pillar of biodiversity support in the mountain economy, are now fewer.

Another important factor in the sustainable development of the mountain area is given by the development of sectors specific to the rural economy (mountain economy). In our interview, both agro-zootechnical activities and the mountain economy were judged to be the most important activities for societal development. Tourism and leisure activities ranked first (93%), agro-zootechnical activities ranked second (90%), and commercial activities ranked third (59%) as being very important for the local community.

At the national level, we can appreciate the fact that the mountain economy is a pillar of support for local communities.

It is worth noting that in addition to existing studies at the European level, there are also studies and strategies of national impact at the level of the member states that have a direct impact on the European mountain economy that are properly oriented on the 3 basic pillars of the sustainable economy, respectively:

- **Economic:** According to existing studies and research at the level of mountain massifs, farms in the mountain area are semisubsistence farms that must be properly supported through support programs and in an integrated form, so that the European policy of “arm to fork” can be found and in the production and marketing of extremely valuable mountain products from the point of view of their content.

- **Social:** The phenomenon of migration was and remains present in mountainous areas, the current population being marked by the process of aging and depopulation of villages, which makes these survival conditions limited. The policy of supporting remote activities, as well as supporting young farmers through financial-support programs, seems to be the short-term solution for rebalancing the villages in the mountain area from a social point of view.
- **Environment and biodiversity:** As Romanian researchers claim “small family farms are a pillar of supporting biodiversity in the local mountain economy,” this aspect has been reconfirmed since 2014, when FAO declared it the Year of the Family Farm, with 400 million family farms ensuring the safety and food security of more than 80% of the world’s population.

A solution proposed by Prof. Dr. Radu Rey, Director of CE-MONT, was given by the creation of associations to unite farmers from the main mountainous massifs, creating the so-called “Mountain Intercooperative Agricultural Associations” with a direct objective related to the valorization of local products—and with their direct orientation to the local, national, and even export markets—so that the standard of living of those who work on such farms increases, with all of these goals leading to the sustainable development of the respective mountain areas.

Moreover, from our point of view we appreciate that at the level of this basic cell of the local community, namely the “family farm,” financing instruments and support programs must be created to support this sustainable development.

Definitions of family farms have varied, depending on local conditions, but all are oriented towards the same common objective: namely, the financial resources generated by such a farm being able to meet the needs of family members and to generate surplus, and for surplus to be traded on organized markets. According to the EU Farm Accountancy Data Network (FADN) [5], the family farm is considered “a farm large enough to ensure the main activity of the farmer and a sufficient level of income for the needs of the whole family.” According to studies at the European level, 85% of the number of farms is represented family farms. “Family farms are the foundation on which the Community Agricultural Policy is built. They continue to be at the heart of European agriculture as a serious generator of competitiveness, growth and employment of the labor force of a dynamic and sustainable rural economy” [24].

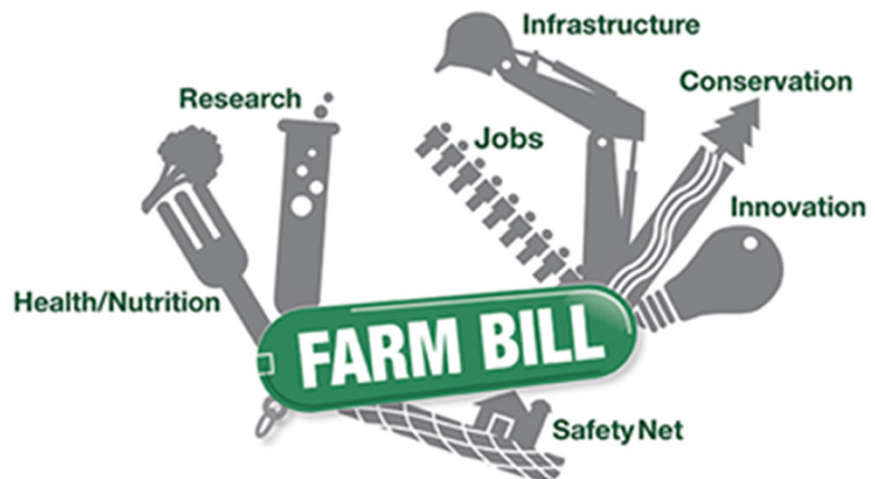
At the same time, it is important to identify the definition of these family farms at a global level, particularly with respect to the EU. The Department of Agriculture of the United States (USDA), through its regulations, defines the family farm according to the following criteria:

- The family farm is private property and can be transmitted by inheritance;
- All management activities are carried out by family members of the farm owner;
- On certain specific activities within the farm or during certain periods of time, salaried, seasonal, limited-period work is also allowed;
- The farm’s activity must generate reliable products that are properly capitalized, so as to support the incomes of the family members, as well as all expenses related to the activities carried out on the farm, including the development of investment projects (loans) for the optimization of technological processes on the farm, thus so that it is recognized by the community as a farm and not as a rural residence.

4.6 Innovative

As a set of new ideas, INNOVATIVE is a solution proposed by Prof. Dr. Radu Rey, Director of CE-MONT. It aims at an association of communal cooperatives in Mountain Agricultural Intercooperative Associations (in traditional mountain “basins”), focused on capitalizing on “mountain products,” without interference in the property of farmers, widely open to export, and with advantageous prices. It could even become the model for breaking the deadlock over with sustainability arguments. At this intercooperative level, a one-time investment policy would be justified to allow capitalization at higher prices by export or in the country and create a reliable source of improving the income of producers’ families and the capitalization of medium-sized and small mountain farms, thereby fighting poverty but necessarily limiting the period of investment to avoid the compensatory efforts from becoming too burdensome for the state. Such a system is part of the mandatory trade rules, which require volume, year-round continuity, quality and health guarantees, and could have the effect of profitability and stability guarantees for a new generation of mountain farmers—a balanced response to the need for sustainability.

A subsequent definition proposed by the author considers a family farm to be the basic cell of the mountain cooperative (according to GEO no. 43/2013). Measures for the development and support of family farms include facilitating access to finance for farmers: “The family farm is an agricultural holding belonging to natural persons as individual agricultural producers registered in the Register of agricultural holdings or registered as an authorized natural person, enterprise individual, family business, established in accordance with the legislation in force, which produces for its own consumption and, where appropriate, sells the surplus.”



“It’s like a Swiss Army knife.”

- President Obama 2/7/14

Fig. 3. Farm Bill

Source: President Obama, July 2, 2014.

It is important to note that family farms are based on two types of strategies to ensure their adaptability and flexibility:

- Multisectoral activity and sustained diversification of complementary activities;
- Harmonization of financial resources both towards both the main activities (e.g., agro-zootechnics) and the complementary ones (e.g., agro-tourism);

Smart and sustainable development of family farms (EU Council, 26 July, 2013). [7] is a priority at the level of the member states, especially in the current context. As I mentioned before, a global priority is focused on the more than 400 million family farms, with a direct impact on food safety and security [24]. In this sense, family farms are considered a guarantee of rural space, ensuring more varied landscapes, sustainable use of natural resources, and better management of public goods compared with large farms.

Family farms usually use two types of strategies to ensure their adaptability and flexibility:

- Multi-activity and diversification of agricultural and nonagricultural activities;
- Avoiding the allocation of a large percentage of resources in one direction;

Due to the huge share of family farms in Europe and the variety of agricultural products resulting from this activity, they are a determining factor in food security at regional, national, and the European level, but it is important not to underestimate the contribution of large corporate farms.

Family farms operate in different economic, agro-ecological, and social contexts, ensuring food security and meeting consumers' expectations for food safety, as well as for food quality, origin, and diversity, thus contributing to smart and sustainable development (EU Council, 26 July, 2013) [7].

Family farms also ensure the sustainability of agricultural ecosystems and biodiversity, primarily through the use of traditional technologies that are more environmentally friendly, but also through the fact that due to size and fragmentation, more shelter remains for biodiversity conservation and the creation of buffers to protect the local microclimate.

Regarding environmental protection, it is fair to point out that there are also weaknesses in family-type farms when, due to bad practices, the directives on nitrates, gas emissions, and water quality or soil erosion are violated.

Another role that family farms play in rural communities is to support rural economies and preserve cultural traditions. They represent a link between tradition and modernism, because they have their roots in local traditions, but as a business they are obliged to be innovative and to adopt modern production and marketing techniques.

Fragmentation and diversification result in a greater need for labor, which slows down the depopulation of rural areas.

In Europe there is a great variability in what the family farm means both in terms of size and organization and also in economic results, so it is difficult to say that it the family farm is the ideal organization, but the role it plays in rural communities and in society as a whole remains undisputed.

The efficiency of each family farm depends on the specific knowledge, techniques, and experience of the family, the quantity and quality of production resources, local

natural conditions, and support infrastructure (e.g., integrated consulting service, microcredit financial instruments, etc.) that are at their fingertips.

The solutions for the mountain economy are built on the foundation of the current European strategies and programs aimed at the horizon of 2050.

One of the support programs for the development of the mountain economy is the European Green Deal [18], which directs socio-economic activities at the level of local communities, supporting the promotion of a mountain economy that is neutral from the point of view of current climate changes and with a direct orientation until the year 2050. Confirming the importance of financial resources for such an objective majority was the first initiative of the presented strategy. The investment plan of the European Green Plan, also known as the Investment Plan for Sustainable Europe [8], has as its main objective the support of investments in the mountain economy under the impact of this transition. However, it is worth noting that the mountain economy, by its nature, is a green economy, which makes the transition process smooth and without obstacles. According to official documents, the plan addresses three aspects [9]:

1. The allocation of approximately €1 trillion (EU budget and other sources) to this common objective over the next 10 years;
2. Sustainability will be the key to all investment decisions and which will be the fundamental priority for all economic activities;
3. Support through technical and financial assistance programs of public administrations, as well as institutions involved in the process of identifying and implementing sustainable projects.

Another financial package of the EU is the Multiannual Financial Framework (2021–2027) [8], which since 2007 has supported climate and environmental objectives, including as a basic financing condition, environmentally friendly investments. This support today is much stronger, being aimed squarely at a carbon-neutral economy. Green investments from public and private sources [15] are supported through these financing instruments and financial-support programs. They play a central role in all resilience and economic recovery plans at the level of each Member State and have a direct impact on local communities.

In 2019, the European Green Deal [4] was left as a new EU enlargement strategy to promote and facilitate the transition to a green, competitive, and inclusive economy [16]. This process brings both benefits and costs, and the regions most exposed to the costs of decarbonization [10] must be preferentially supported. The year 2020 represents the reference year for the Investment Plan for Sustainable Europe [14]. It complements other initiatives expected under the European Green Deal and aims at the allocation and use by Member States of the funds needed for the green transition. In the period 2021–2030, the European Commission will mobilize at least €1 trillion in sustainable investments by increasing resources for climate action from the EU budget and by using additional public and private funds [12, 13, 13]. The European investment plan for the green transition and the objectives set by the European Investment Bank (EIB) we believe should be oriented towards those support investments generated by climate change [18], respectively, through the approximately €1.75 trillion allocated to the projects that will be funded.

The EU's Multiannual Financial Framework (2021–2027) [8] has traditionally been a strong supporter of climate and environmental goals, with resources commensurate with the goal of facilitating a smooth transition to a carbon-neutral economy. The impact of the pandemic has raised concerns that decarbonization strategies could be derailed. However, more than ever, experts and stakeholders generally agree on their continuing relevance, arguing that green investment from public and private sources [15] must play a central role in any economic recovery plan at European level, and implicitly at the local level.

The EU is a supporter and leader in the fight against climate change at the international level and is expected to further intensify its actions in this area during its 2019–2024 institutional cycle. On December 11, 2019, in her first weeks in office, European Commission President Ursula Von der Leyen launched the European Green Deal [4] as the new EU enlargement strategy to promote and facilitate the transition to a green economy, competitive and inclusive [16].

Such a major economic transition requires huge financial investment, including ensuring that the process benefits all parts of society and supporting citizens and regions most exposed to the costs of decarbonization [10].

On January 14, 2020, the European Commission issued a Communication detailing the European Green Plan Investment Plan, also known as the Sustainable Europe Investment Plan [14]. The investment plan, which complements other initiatives expected under the European Green Agreement, aims to make available and use the necessary funding for the transition to 2030, seeking to put sustainability at the center of both public and private investment and spending at center of private investment. In the period 2021–2030, the European Commission will mobilize at least €1 trillion in sustainable investment by increasing resources for climate action under the EU budget and by using additional public and private funding [12, 13]. Part of the global resources will be specifically designed to support the regions most exposed to the challenges of the transition.

The mobilization of financial resources worth €1 trillion over 10 years is part of the investment plan that has so far attracted the attention of the majority. According to official documents, about half of the amount would come directly from the EU budget, while other public and private sources would provide the rest, mainly through leverage. Furthermore, we believe that the European Investment Bank (EIB) should be a key partner in mobilizing additional funding, as it is expected to trigger investments of up to around €250 billion (i.e., a quarter of the total) according to EU mandates under the investment plan. Given that the EIB has announced its own goal of supporting €1 trillion in climate action and investment in environmental sustainability over the next decade, it should be noted that the two targets only partially overlap. It can therefore be inferred that, taken together, the European Investment Plan for Green Transactions and the EIB's target should have the potential to provide around €1.75 trillion in climate finance [18].

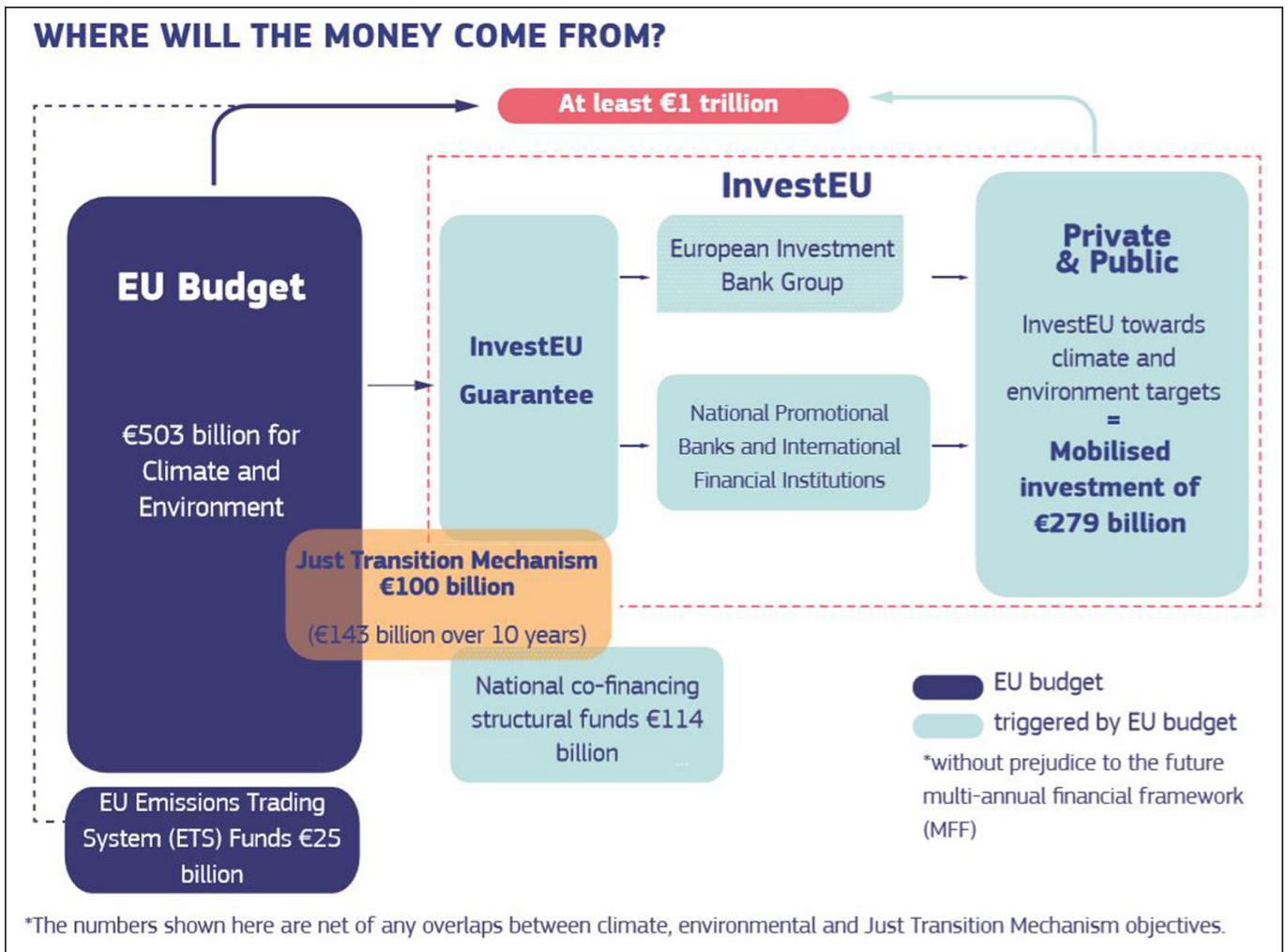


Fig. 4. Funding elements amounting to at least €1 trillion in the period 2021–2030 under the European Investment Plan for Green Transactions [18]

Source: Own processing, European Commission, 2020.

The support policy of the member states in the process of moving to the green transition is a component of all the financing programs that are managed by the European Commission and that are intended for the member states. A direct condition was given as 25% of the entire financial package 2021–2027 (€503 billion), which makes all Member States manage these programs under this common objective. Another aspect that characterizes this programming period is given by the process of supporting the fields of activity that provide additional jobs [21].

It is very important, in addition to the funding packages/programs allocated to mountain areas, to identify the possible research changes that would be predicted for the next 20 years [18]. These include:

- **Digitalization of the infrastructure to increase the attractiveness of rural areas (including mountain areas) within 20 years.** From the studies carried out at the level of the member states, it emerged that 93% of those interviewed gave a favorable answer for digital connectivity. Another theme submitted to the public debate was given as the reduction of the footprint of agriculture on the climate and environment, which influences the attractiveness of rural areas. Over 92% of interviewees supported this.

- **Increasing the ecosystem services to be provided by rural areas (including mountain areas).** Of those interviewed, 95% considered “Landscape, countryside, biodiversity and wild habitat” important.

Good societal governance is another priority, and the involvement of local communities in decision making is extremely important. According to the same study, 83% of those interviewed want to be active in making local decisions that have a direct impact on local communities in rural areas (including mountain areas).

The strategies should be correlated with the needs of local communities, which means that in addition to those existing at the European level, they must also exist at the level of the member states, and even at the local level, as otherwise in the view of CE-MONT researchers under the direct coordination Prof. Dr. Radu Rey [3].

Many existing financial instruments and programs are in a continuous process of innovation and support the common agricultural policy [19] so that the member states, through their representatives, shape the future of mountain areas and respond to local needs in close correlation with national strategic plans [29] and with the economic, environmental, and social objectives specific to the CAP [30], including the objectives arising from the European Green Deal [20], based on the needs identified at the community level, such as those in mountain areas. Figure 4 breaks down the total amount of at least €1 trillion. Furthermore, the European Commission presents this figure as clear of possible overlaps, taking into account the fact that different sources of funding and/or instruments may interact and contribute to a particular joint project or operation. In descending order of magnitude, five broad categories of climate finance sources would support a wide range of projects and contribute to the European Green Plan Investment Plan, as follows:

1. EU budget totaling €503 billion. The European Commission has proposed that at least 25% of post-2020 MFF resources be allocated to climate-related spending by incorporating climate considerations into many EU budget funds and programs. Tools that should make a significant contribution to this goal include:
 - Funds under the common agricultural policy (CAP);
 - European Regional Development Fund (ERDF);
 - Cohesion Fund 2021–2027;
 - Horizon Europe Framework Program for Research and Innovation;
 - LIFE program; and
 - Connecting Europe Facility (CEF).

This approach is based on the experience with climate integration in the current MFF, below which the climate target amounts to 20% of total resources 2014–2020.

2. The EIB Group and other investment partners in the context of InvestEU (€279 billion). The proposal for the MFF 2021–2027 includes the creation of the InvestEU program to streamline in a single investment scheme the operations currently carried out under the European Fund for Strategic Investments (EFSI) and various financial instruments supported by the EU budget. Furthermore, InvestEU would be the key tool to exploit the capacity of the EU budget to benefit from additional public and private funding for investments in the EU’s internal policies, as well as its focus on the dominant segment of business beneficiaries, namely SMEs. The Commission has proposed a 30% climate target for InvestEU

operations. The Commission intends to develop financial products aimed at ecological, climate, and social sustainability within InvestEU. The Multiannual Financial Framework (MFF) has a focus on the regions and communities most exposed to the challenges of transition. This mechanism would be structured on three pillars:

- A fair transition fund, with €7.5 billion in new money by 2027;
- A specialized fair transition scheme within InvestEU;
- A new public-sector loan facility, with the EIB, to benefit from additional public funding.

Particular attention is paid to economic sectors that provide additional jobs [21], namely in the sector of activity the production of fossil fuels or related industries. Under Cohesion Policy, EU Member States will identify eligible regions and the planned transition process by 2030 in the fair territorial transition plans to be approved by the European Commission. Member States and regions will benefit from technical and advisory support from the Commission through a fair transition platform.

Returning to the results of the studies carried out by the European Commission, we present the possible changes in rural areas in the next 20 years [18], respectively:

- **The attractiveness of rural areas in 20 years depends largely on the availability of digital connectivity and basic services/e-services.** This is the case for 93% of responses for digital connectivity (71% more attractive and 22% more attractive) and 94% for basic/electronic services (69% more attractive and 25% more attractive). Reducing the footprint of agriculture on climate and the environment influences the attractiveness of rural areas for 92% of participants (66% much more attractive and 26% more attractive). Social innovation and new lifestyle choices [17] are developments that will make rural areas attractive for 92% and 90%, respectively (63% more attractive and 29% and 27% more attractive).
- **The importance of ecosystem services provided by rural areas.** There is a very broad consensus among respondents that the importance of the services listed in the questionnaire will increase sharply over the next 20 years (from 88% to 95% of responses). Almost all respondents (95%) believe that the importance of “Landscape, rural landscape, biodiversity, and wildlife habitat” will increase (by 74% more than at present and by 22% slightly more than at present). The answers are similar for climate mitigation and adaptation (72% more and 22% slightly more), for the prevention of floods and forest fires (63% and 29%), and for the supply of clean water (59 and 33%).
- **Safe and dynamic communities of the future.** Four of the nine options offered to respond to what will make rural areas most attractive in the long run received more than 1,000 responses. First, care services (i.e. support for children, the elderly and people with disabilities), followed by employment (i.e. local business and employment opportunities/local entrepreneurship), governance (rural people are able to participate in decisions that affect them and also look to express their opinions and priorities) and the availability of local services (e.g., shops, banks/ATMs, mechanics).

Another particular focus of the Commission is on good governance of local authorities in rural areas [17]. People were asked “Do people feel left behind by society?” Overall, 39% of respondents indicated that they felt left behind by society. Almost half (45%) of respondents involved in agriculture said they felt left behind by society. This was also the case for more than half (56%) of respondents living in remote rural areas and for 41% of respondents living in rural areas. The most important reason was “Infrastructure and services damaged,” with 61% of responses (26% most important and 34% important). The second most important reason was “Decreased income/lack of economic opportunities,” with 57% of the most important and important responses. The third most important reason was “The specific needs of the rural population are not sufficiently taken into account in political decisions” (53%, including the most important 29% and 24% important).

- **Involvement of locals in decision making.** 83% of participants agreed that local decisions have an impact on the lives of people in rural areas. 77% believed that polling stations are easily accessible in rural areas during elections. A minority (45%) of respondents believed that people in rural areas are actively involved in policy making. Only a quarter (27%) considered that special attention is paid to rural areas when developing general and territorial public policies.
- **Ways to involve the rural population in the public debate.** A large majority of respondents (68%) indicated that the most effective way to involve the rural population in the public debate is to organize events in rural areas. Other options received included surveys (13% of responses), European Citizens’ Initiative (10%), and events/debates on rural areas organized in urban areas (9%).
- **Components of the long-term strategy and action plan for rural areas.** With 1,691 responses, the first component of the EU’s long-term strategy indicated by respondents was “the strategy for job creation, support for rural entrepreneurship, and innovation” “Improving access to infrastructure and services” (1,295 responses) and “Strategy for improving connectivity and digital solutions, supporting the emergence and development of smart villages” (1,244 responses) came in second and third. The fourth most frequently selected component by respondents was the “Strategy for Achieving Climate, Energy and Biodiversity Goals” (1,136 responses). “Addressing demographic challenges, including depopulation, generational renewal and gender inequality” ranked fifth, with 1,000 responses.

Medium and long-term strategy at the national level is the vision of CE-MONT researchers under the direct coordination of Prof. Dr. Radu Rey [3]. It can be implemented in the association of family farms in mountain areas, along with other entrepreneurial activities supporting the sustainable development of the mountain economy.

Many existing and innovative tools continue to be available in the Common Agricultural Policy [19] to help Member States shape the future of mountain areas. Member States have more flexibility in this programming period through the National Strategic Plans [29] to design appropriate interventions to address CAP-specific economic, environmental and social objectives [30], including objectives stemming from the European Green Pact [20], based on identified needs, such as those in mountain areas.

5 CONCLUSIONS

The harmonization of national mountain strategies with the European mountain strategy actively contributes to the sustainable development of local communities in mountain areas and supports the convergence of mountain economies for the next decades, towards the horizon of 2050, but also in the short term directly correlated with the UN 2030 objectives. According to all the statistical data and in the current context of economic crises, pandemics, armed conflicts, financial upheavals, and climate change, These may be increasingly difficult to achieve, especially, given the problems of poverty, hunger; sickness, inadequate education, gender inequality, insecure drinking water and sewage, unaffordable renewable energy, lack of economic growth and decent work; stagnant industry, innovation, and infrastructure; failure to reduce inequalities; unsustainable communities and cities; unsustainable production and consumption; slowness to combat climate change; failure to protect aquatic and terrestrial life; lack of peace, justice and strong institutions; weak professional partnerships.

Through this empirical research, existing European and global strategies, programs and policies for the mountain economy, we appreciate that we have answered the hypotheses set out in the study, but due to the lack of centralized data on the mountain economy at the European level, we can say that this is a limitation of our study. But we have the determination to continue our research in defining a specific model of mountain economy at the national and European levels. Furthermore, we also aim to implement a national and European mountain strategy governed by the 5Ps (People, Planet, Prosperity, Partnership, and Peace) and support the well-being of all.

5.1 European Mountain Strategy

The Mountain Strategy is a flexible community diversity strategy, adaptable to diversity, on the principle of subsidiarity and with adaptations to local contexts for socio-economic cohesion, with effective support for emerging economies, far behind, is the “expectation” for the next decades (Horizon 2021–2050) in line with the UN Agenda 2030.

The Mountain Strategy is in line with the 17 Sustainable Development Goals set out in the UN 2030 Agenda [26], which I believe should govern the methodology of any strategy and action work during this period, namely:

1. Poverty eradication: the global target is 0 people living on an income of less than \$1.25 / day. In Romania, 18.2% of people lived in persistent poverty in 2012, and according to data provided by the National Institute of Statistics, in 2017 the number of the poor increased to 5,600,000 people.
2. Eradicate hunger: the overall goal is to reduce the hunger threshold to 0%; Romania has made progress since the 1990s, from 2% to 0% of the undernourished population in 2017.
3. Health and well-being: the overall goal is to reduce neonatal and infant mortality (less than 12 cases per 1,000 births, and less than 25 cases per 1,000 births). In Romania, in 2017, for every 1,000 children under the age of 5, there were 12 deaths.
4. Education and quality: the global goal is to reduce the dropout rate to 0% and combat any form of differentiation that impedes access to education. In Romania, in 2016, 18.1% of students dropped out of school (26th place out of 28 EU countries).

5. Gender equality: the global goal: the goal is to eradicate any form of gender discrimination. Romania ranks 70th out of 136 states in the gender gap index, with a score of 0.691 (1 = equality).
6. Drinking water and sanitation: the global target is to facilitate universal and reasonable access to drinking water systems and sanitation services. In Romania, in 2016, only 62.4% of the population had access to the public water supply system, and in rural areas the figure was 25%.
7. Accessible renewable energy: the global target is a substantial increase in the proportion of renewable energy in total energy consumption. In 2016, 41% of energy was produced from renewable sources.
8. Economic growth and decent work: the global goal is achieving full labor productivity for all, with a special focus on young people and people with disabilities, based on equal value and income.
9. Industry, innovation, and infrastructure: the global goal is to develop infrastructure through affordable prices and fair services for all. In Romania, 20% of all enterprises have introduced innovative policies in their activity.
10. Reducing inequalities: the global goal is to promote the social, economic, and political inclusion of all, regardless of age, gender, disability, race, ethnicity, religion, or economic status. The average level in the European Union of the income inequality index has been exceeded in by 11 member states, including Romania, since 2009.
11. Sustainable communities and cities: the global goal is access for all to have decent, affordable housing and basic services. In Romania, in 2016, the municipal waste recycling rate was 7% (compared with 0.29% in 2003).
12. Sustainable production and consumption: the global target is a framework program of at least 10 years for sustainable development (production vs. consumption). Romanians throw away 2.2 million tons of food every year, i.e. 10% of the food bought.
13. Combating climate change: the global goal is to strengthen countries' resilience and capacity to deal with climate change risks. In Romania, in 2016, the level of fine particles was 14.85% mg/cubic meter (a value similar to that in the region).
14. Protecting aquatic life: the global goal is to reduce and prevent water pollution. In Romania in 2016, 56 accidental water pollution incidents were registered, of which 27 were oil products.
15. Protecting terrestrial life: the global goal is sustainable forest management, combating land degradation and biodiversity loss. In Romania, 27 counties are classified in risk areas, of which 21 are in the red code zone of illegal deforestation.
16. Peace, justice, and strong institutions: the global goal is to ensure 100% coverage of people with identity documents, including birth certificates.
17. Professional partnerships: global target is both macro- and micro-cooperation to achieve objectives.

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7 AUTHOR

Otilia Manta, Financial and Monetary Research Center “Victor Slavescu”, Romanian Academy, 050711 Bucharest, Romania; CE-MONT Mountain Economy Center, Romanian Academy, Vatra Dornei, Romania; Romanian-American University, 012101 Bucharest, Romania; https://www.researchgate.net/profile/Otilia_Manta; <https://orcid.org/0000-0002-9411-7925>; <https://publons.com/a/1602265/>; <https://www.webofscience.com/wos/author/record/576166>.