

## THE SOCIO-OCCUPATIONAL STRUCTURE OF THE POPULATION IN THE APUSENI MOUNTAINS. CASE STUDY: THE LAND OF THE MOȚI

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**ABSTRACT** – The aim of our study is to highlight the changes in the socio-occupational structure of the population living in the Apuseni Mountains between 1992 and 2011, through a case study example, namely the Land of the the Moți, a region in the central part of the mountains. The aim is to highlight any critical status induced by the geodemographic components. These changes do not differ significantly from other regions in Romania and they are expressed by a decreasing share of the population employed in the secondary sector, in parallel with an increase of the same segment of population employed in primary and tertiary sectors. However, due to changes in the Romanian economy in the last two decades, agriculture and forestry have become dominant in the region. Even if an obvious risk situation is not noticeable, as striking as depopulation or ageing, we must sound the alarm about communities in the mountain area. Despite the obvious intensification of the tertiary activities, this area remains weakly developed, dominated by the agricultural sector, less productive and low yield.

**Keywords:** socio-occupational structure, geodemographic risks, sectors of activity, active population, employed population

### INTRODUCTION

This study, which aims to highlight the changes in the socio-occupational structure of the population living in the Apuseni Mountains for two decades (1992-2011) and to highlight any critical conditions related to it, is a continuation of some previous works on the Apuseni Mountains regional system. These works have analyzed certain geodemographic aspects of this regional entity with the aim to identify possible geodemographic risks and emphasize the need to implement some regional policies that contribute to population stabilization in the region and to ensure demographic and sustainable economic growth. Thus, one can identify some concrete geodemographic risks within the territorial system of the Apuseni Mountains resulting from the action of two major processes: massive emigration, mainly of the young and adult age groups, and the falling birth rates, a consequence of emigration. The main risks we refer to is the *depopulation* process accompanied by *geodemographic decline* and *population ageing* (Mureșan, 2014; Mureșan and Boțan, 2014).

Another indicator that we considered relevant is the *occupational structure* of the population and, within it, the structure of economic activities. In this regard, we tried to trace how the mutations of the ratio between the demographic component and the economic activities performed may represent a risk factor for the entire system. There is a complex interrelation between population and economy, that is, on the one hand, a certain development of the population has repercussions on the economic development and, on the other hand, the level of economic development affects demographic phenomena and processes (Nicoară, 1999). The distribution of the active population by sector of economic activity is one of the most important and used criteria for assessing the level of socio-economic development of a geographical entity (Nicoară, 1999). Although, three major sectors of

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economic activity have been long accepted, in recent decades, a fourth sector was added. Thus, "according to the specialized bodies of the UN, four main sectors of activity are distinguished, namely: *the primary sector* (agriculture, forestry, fishing, hunting), *the secondary sector*, which includes all the branches of the manufacturing industry (including mining and construction), *the tertiary sector*, including trade, education, health, tourism, administration, etc. and *the quaternary sector*, which includes mainly the high-tech fields (robotics, computer science)"(Josan, 2009, p. 119).

## METHODOLOGY

Before presenting the results of our analysis, we must clarify some methodological aspects. This analysis was conducted for two years of reference, 1992 and 2011, the years in which the most recent national censuses were conducted. In terms of population structure by economic activities, there are some differences between the two periods. In 1992, the distribution of population by economic activities was done by referring to the active population, this data including also the category of "people seeking their first job" (interpreted as unemployed). Instead, the 2011 Population and Housing Census operated with the employed population and not the active one. The employed population is the part of the active population that has a job for which it is remunerated at the time of the census. Together with the unemployed (registered at the same census), it forms the active population, representing all persons who usually have an occupation. This makes some differences in the interpretation of data, which, at first glance, appear larger than in reality. On the other hand, as in other cases (Mureșan 2008), we started from the idea that at the 1992 census the number of unemployed was low; the economic liberalization measures were recent and their effects had not been propagated in the labour market. Consequently, we can say that there are not major differences between the two operational categories at the two points in time. This allows the comparison of the two years of reference and the identification of some trends in the evolution of the socio-occupational structure of the population.

There are also some changes as regards the main activities included in the economic activity sectors. Without going into details, we must mention that the secondary sector included five types of activities at the 2011 census, as opposed to four in 1992. In addition, services included thirteen activities in 2011 instead of only nine in 1992. One major difference is that, in 2011, household activities were included for the first time, being considered productive activities (*activities of private households as employers of domestic personnel; undifferentiated goods- and services-producing activities of private households for own use*). Because these activities could not be included in the services sector, we counted them as representing a special segment entitled "Other activities".

A final reference ought to be made on the study area. Although the original purpose of the paper was to highlight some aspects of the socio-occupational structure of the population and the critical conditions associated to the Apuseni Mountains, we proceeded, as in the above-mentioned articles, by choosing a case study for which statistical data gathering and processing were easier. The area chosen is the Land of the Moți, as defined and delineated in the book "The Land of the Moți. Study of Regional Geography" (Boțan, 2010). It is the region located in the central part of the Apuseni Mountains, which overlaps the upper Arieș River basin and is broadly defined by the great heights around. From an administrative-territorial viewpoint, it belongs entirely to Alba County. The region includes two towns (Abrud and Câmpeni), with their component settlements, and 14 communes with their component villages.

## SOCIO-OCCUPATIONAL STRUCTURE OF THE POPULATION

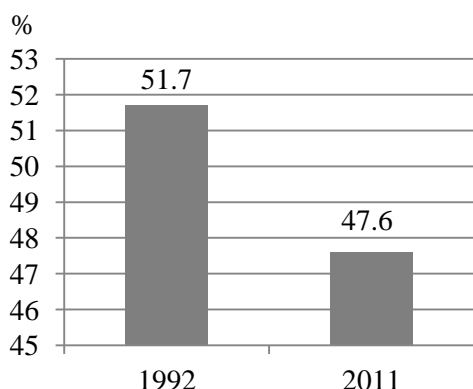
As already mentioned, the detailed analysis at the level of administrative-territorial units is focused on the 1992-2011 period and is meant to highlight the trends recorded in the last two decades and the current status.

In 1992, the active population in the Land of the Moți had a majority share of 51.7% of the total population; this value defined, in fact, the overall rate of activity (Figure 1). At the level of administrative-territorial units, the following stood out (Boțan, 2010): the units with a high share of active population (more than 60%) were few; only three communes recorded such values, namely

THE SOCIO-OCCUPATIONAL STRUCTURE OF THE POPULATION IN THE APUSENI MOUNTAINS.  
CASE STUDY: THE LAND OF THE MOȚI

Poiana Vadului (67.9%), Gârda de Sus (66.2%), and Horea (62.3%). These were the communes where the main activity areas are wood processing and agritourism, the specific potential being a high one. The share of the active population fell between 50-60% in most of the communes in the region (e.g. Arieșeni, Scărișoara, Bistra, Sohodol, Vidra, Vadu Moților), conferring a defining note to the analyzed region from this perspective. Other five communes and the two urban entities had an overall rate of activity under 50%, the lowest values were recorded in Ciuruleasa (40.2%) and Roșia Montană (43.4%), with industrial activities induced by mining.

The situation of the occupational structure of the population in 2011 was the result of the significant mutations that took place in the entire Romanian economy and of the demographic processes that intensified over the past two decades. Thus, the economic restructuring, which affected mainly the industry concentrated in cities and mining areas, privatization accompanied by layoffs, often massive, and mine closures have generated not only alarming unemployment, but also an influx of population from areas more affected to those still in economic development or to other western European countries. In the area of the Apuseni Mountains, the intense phenomenon of depopulation in the mountain area was reported in many specialized papers, resulting from a growing emigration and a decline in the birth rate. Cessation of the mining activity, starting with 2005 and 2006, resulted in a decrease in the overall activity ratio and in the share of the active population. On the other hand, this process of economic restructuring in towns led also to an urban-rural remigration. All these phenomena had direct consequences in terms of structural changes in the economy of the Apuseni Mountains.



**Figure 1.** *The share of the active population in the Land of the Moți in 1992 and 2011*

In 2011, the share of the active population in the Land of the Moți was 47.6%, showing no significant decrease (Fig. 1). In reality, however, in absolute figures, the active population decreased by almost one third in two decades, from 25,860 active people (1992) to 18,609 (2011). Out of this, an overwhelming percentage, 91.3%, is represented by the employed population.

At the level of administrative-territorial units, the situation is the following: the active population no longer exceeds 60%, compared to 1992; values ranging between 50-60% are recorded in seven communes, of which in only one case the value is over 55% (Poiana Vadului, which in 1992 recorded the highest activity rate; the others are Sohodol, Vidra, Bucium, Horea, Ciuruleasa, and Vadu Moților); five other communes (Arieșeni, Roșia Montană, Bistra, Scărișoara, and Gârda de Sus) and the two towns (Abrud and Câmpeni) have a share ranging between 40-50%; there are also two administrative units in which the general activity rate dropped considerably below 40% - Avram Iancu (36.9%) and Albac (39.9%).

The vast majority of the communes in the Land of the Moți recorded a decrease in the share of the active population between 1992 and 2011, as well as the town of Câmpeni. Exceptions are the mining communes (Roșia Montană and Bucium), and those in their close vicinity (Ciuruleasa and Sohodol). However, more surprising is the peculiar situation of some administrative units. Thus, Gârda de Sus recorded a decrease in the overall activity rate by almost 20 percentage points, from 66.2% in 1992 to 48.6% in 2011. A possible explanation would be a change in the population structure by age, i.e. the share of the old age group increased from 19.9% in 1992 to 28.5% in 2011 to the detriment of the adult age group. The situation in this commune is a particular one. It has an exceptional tourism potential, perhaps the most attractive and consistent of all the administrative units in the Land of the Moți, which began to capitalize it by implementing a large number of accommodation and catering units. Thus, income level increased, which considerably increased the quality of life and, implicitly, increased life expectancy. On the other hand, in the above-mentioned

period, there were substantial departures to work abroad, which affected mostly the young and adult age groups. All these reasons explain the reduction in the overall rate of activity in the commune during the analysed period. These arguments also explain the significant decline in the overall rate of activity in Avram Iancu commune, in the same period, from 45.3% (in 1992) to 36.9% (in 2011); the latter represent the lowest share of the active population (in 2011) of all the administrative units in the Land of the Moți. Two other communes, characterized by a low share of the active population in 1992 (below 50%) appear with values higher than 50% in 2011: Bucium, where the increase was slight, from 49.1% in 1992 to 51.8% in 2011, and Ciuruleasa that, from the lowest value of 40.2% in 1992 increased to 54.1% in 2011. In the latter case, the situation must be correlated with the age structure. Thus, in absolute values, the increase in the number of the active population is of only six people, but it was the overall number of the population that decreased, so that the share of the active population increased. This is due to the fact that the share of the adult age group increased at the level of the commune due to the passing of a significant number of young people in the next age group, the working age. But if we take into account only the employed population, as mentioned in the introduction, the percentage decreased to 48.8% in 2011.

### STRUCTURE OF POPULATION BY ECONOMIC SECTORS

Although four economic sectors are considered lately, the elements specific to the quaternary sector are almost nonexistent in the Land of the Moți. Therefore, we did not include it in the analysis and we limited to the three well-known sectors: primary, secondary, and tertiary.

In the 1992, the active population of the Land of the Moți recorded a number of 25,860 people. The primary sector has the largest share, namely 40.5% (10,463 persons), followed by the secondary sector with 35.4% (9,152 persons) and the tertiary sector, with 21.1% (5,446 persons). The remaining 799 active persons (3.1% of the total) were recorded as people seeking their first job. At that time, the situation was generally typical for the mountain areas in Romania, with a predominance of agricultural activities (in which wood exploitation has an important role), but it also presents a specific feature of the Apuseni Mountains, with a high share of the secondary sector due to the development of the extraction industry. Continuing the analysis at the level of administrative units, the situation described above is maintained. Agriculture and forestry remain the main occupations of the rural population, while industry and services are attributes of the urban environment. However, in the eastern half of the region, due to the presence of gold and silver ores and their exploitation, the secondary sector is well represented in several communes.

Moreover, one can highlight a divide in terms of the intensity of activities between the western and eastern half of the region (Boțan, 2010). The western part, essentially rural, is characterized by the predominance of the *primary sector* in each administrative-territorial unit; most of the working population is concentrated on agriculture and forestry. Communes in this part have shares of the active population in the primary sector of more than 50% and, in some cases, of more than 60% (e.g. Gârda de Sus, Horea, Poiana Vadului, Scărișoara, Vadu Moților). The eastern communes (e.g. Bucium, Ciuruleasa, Roșia Montană, Sohodol, and Bistra) and the two towns have a smaller number of active persons working in the primary sector, generally accounting for under 40% of the total active population.

The share of the active population in the *secondary sector* correlates very well with the values presented above. Thus, the communes in the western half of the area under analysis have a share of the active population in industry and construction of less than 20%, especially in the communes where agriculture is well represented (more than 60%): Gârda de Sus, Horea, Poiana Vadului, Scărișoara, Vadu Moților. Values between 20 and 30% are also recorded in the western communes (Arieșeni, Albac, Avram Iancu, Vidra). The highest percentages, of more than 30%, but mostly of more than 40%, are recorded in the administrative units located in the eastern half: Abrud and Câmpeni, and the communes of Bucium, Ciuruleasa, Roșia Montană, Sohodol, and Bistra. Both activities in the extraction and processing industry and construction are present.

The *tertiary sector* is generally characterized by shares between 10 and 20% in all communes, with one exception, Poiana Vadului, where this sector is less present (8%). A special case is

THE SOCIO-OCCUPATIONAL STRUCTURE OF THE POPULATION IN THE APUSENI MOUNTAINS.  
CASE STUDY: THE LAND OF THE MOȚI

represented by the two towns, with more developed services, representing more than 30% of their active population. The most represented areas of activity were hotel and catering (1,116 persons), transport and telecommunications (1,386 persons), public administration (754 persons), education (802 persons), health and social assistance (727 persons).

Therefore, the western half of the Land of the Moți had a predominantly agricultural character, with a weak development of the processing industry. In contrast, the eastern part was more complex, both by the number of the active population and by the more intensive development of the economic activity sectors (Boțan, 2010).

The analysis for 2011 brings some changes due to the transformations in the Romanian economy in the last two decades. First, the share of the primary sector increased to 49.1% (8,347 persons), while the secondary sector decreased to 19.6% (3,327 persons). The tertiary sector also increased, reaching 29.8% (which means 5,064 persons) and there is also a separate segment, "Other activities", including especially household activities, which represent 1.5% of the total workforce (254 persons). Not only the share of the secondary sector decreased between 1992 and 2011, but also the number of people employed in this sector, by more than a half in absolute values (from 9,152 to 3,327 employees), following the mine closures in 2005-2006 and the cessation of some industrial activities. The towns of the region decreased their number of employees in industry and construction in 2011 with more than half of the value of 1992. But the rural area is the one that recorded the highest decrease in the secondary sector, about 70%. Communes in the western part recorded the highest decrease, of more than 70-80% (Albac, Arieșeni, Avram Iancu, Gârda de Sus, Vidra, Poiana Vadului, Scărișoara). It does not mean that, in absolute values, these communes had a large number of employees in industry and construction in 1992, but that from a number of 100-300 persons they reached only 20-50 persons employed in the secondary sector. The administrative-territorial units in the eastern part also lost more than 60% of the population employed in this sector. The primary sector also recorded, in absolute values, a decreasing number of employees due to the decrease in the total number of population between 1992 and 2011. But its share in the total active population increased significantly, which indicates the great importance this sector of activity got in the last two decades.

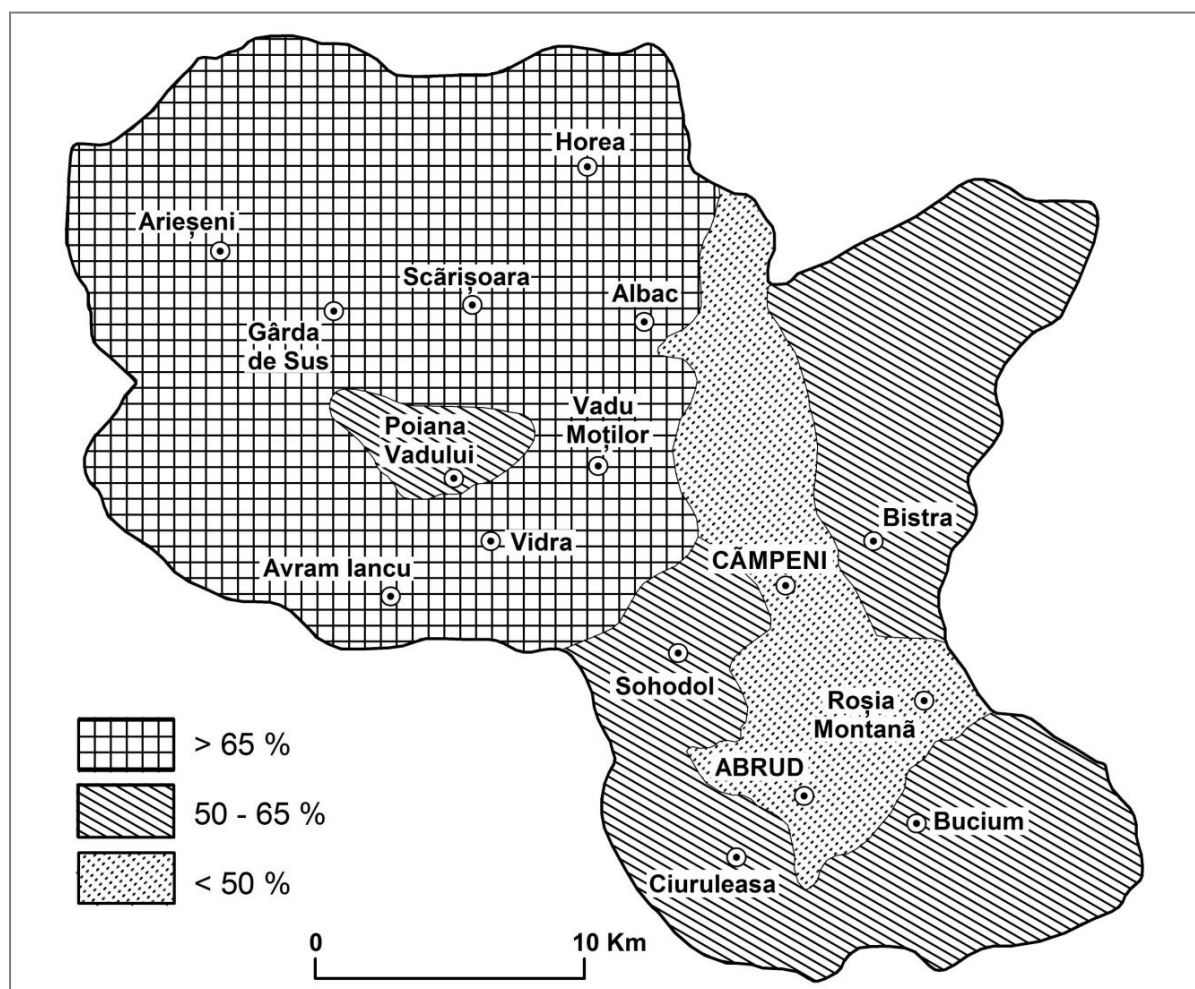
Decreases in the secondary sector are found in increases in the share of population employed in other activity sectors. Thus, the share of population employed in *the primary sector* increased both in the rural and in the urban areas of the region. This is a consequence of the massive layoffs in industry and especially of the cessation of mining activities, which caused population to turn to other activities, primarily to agriculture and wood exploitation, with great traditions in the region. Thus, in most communes, the share of the population employed in agriculture and forestry increased between 1992 and 2011. Only two communes are exception: Poiana Vadului, where the share fell from 80.5% (1992) to 53.3% (2011) – but this decrease is explained by the fact that part of this population was reviewed in the 2011 census in "Activities of private households as employers of domestic personnel" (26.1%) – and Gârda de Sus, where the decrease was less significant (from 76.3% to 73%). Compared with 1992, in 2011 all communes in the western part also recorded the highest values of population employed in the primary sector, more than 65%: Albac, Arieșeni, Avram Iancu, Gârda de Sus, Horea, Scărișoara, Vadu Moților, Vidra. The eastern communes (Bistra, Bucium, Ciuruleasa, and Sohodol) had values below 65%, but not less than 50%. It was only Roșia Montană, with its mining characteristics, had a lower share (38.5%), as well as the two towns that had a very low share of population employed in agriculture, not exceeding 25%.

Regarding *the secondary sector*, it was already indicated that it suffered a sharp decline in the share of employed population at the level of administrative territorial units, but also at the level of the whole territory. This sector completes the picture of the differences between the western and the eastern part of the region in terms of economic activities. Of the 16 administrative-territorial units, those which had large shares in the primary sector and are located in the west, recorded values below 10% of the population employed in the secondary sector (Albac, Arieșeni, Avram Iancu, Gârda de Sus, Horea, Scărișoara, Vadu Moților, Vidra, and Poiana Vadului). The two towns and the communes in the east, where mining activities prevailed (at least until 2006) (Bucium and Roșia Montană), and the commune of Bistra, which is the largest in the region, had shares of more than 20% of the

population employed in the secondary. Two other communes in the east (Ciuruleasa and Sohodol), characterized in 1992 by a large workforce employed in the mining activities located in the neighbouring administrative units, had a share of 10-20% of the population employed in the secondary sector.

In line with the significant reduction of employment in industry and related activities and with the development of society as a whole, the *tertiary sector* experienced an intensification of activities and an increase in the share of employed population, not only at the level of the Land of the Moți, but also at the level of all administrative-territorial units. If, in 1992, only the two towns, Abrud and Cămpeni, held shares of more than 20% in services, in 2011, ten communes exceeded this value (Albac, Arieșeni, Avram Iancu, Vadu Moților, Vidra, Bistra, Bucium, Roșia Montană, Ciuruleasa, and Sohodol), while the urban area reached 45-49%. The remaining communes had shares ranging between 10 and 20% (Horea, Gârda de Sus, Poiana Vadului, Scărișoara). The dominant activities in the service sector remain trade, public administration, education and health, followed by transport and storage, as well as tourism.

For 2011, household activities, included in the census for the first time, represent the segment we called “Other activities”, which involves 1.5% of the region’s population. Higher shares of the population employed in these activities were identified only in Poiana Vadului (26.1%), followed by Gârda de Sus (5%) and Ciuruleasa (2.7%), while all other territorial units recorded shares lower than 1%.



**Figure 2.** The share of the population employed in agriculture in the Land of the Moți (2011)

THE SOCIO-OCCUPATIONAL STRUCTURE OF THE POPULATION IN THE APUSENI MOUNTAINS.  
CASE STUDY: THE LAND OF THE MOȚI

### CONCLUSIONS

The analysis of the socio-occupational structure of the population in the Land of the Moți for the period 1992-2011 shows some changes occurred against the background of the social and economic changes that took place in Romania in the past two decades. These changes do not generally differ from other regions of the country and from the situation at national level and they are expressed through a decrease in the share of the population employed in the secondary sector, in parallel with an increase of the same segment of the population in the primary and tertiary sectors. There are particular situations and exceptions to this overall trend, due to some regional and/or local factors.

The analysis also revealed a sharp distinction between the western and the eastern part of area under analysis. The western part, deeply rural, is dominated by farming and wood exploitation in both years of reference. Industry is less present in 1992 and even less in 2011. Services are somehow more intense, but they do not exceed, except in a few cases, 20% of the total employed population (in 2011) at the level of the administrative-territorial units. Instead, the eastern part, which includes the communes in which mining activities have long prevailed and the largest commune of the region (Bistra), has a more complex character in terms of the number of active persons and of the more intensive development of different economic activity sectors. However, although in 1992, the primary and secondary sectors were relatively balanced (except Roșia Montană where the secondary sector prevailed), in 2011, the primary sector became dominant in these communes as well (with the same exception, which presents a relatively balance situation of the three sectors).

In the two urban entities, the shares of the secondary and tertiary sectors were relatively close in 1992, but in 2011, services became dominant. Although the share of the tertiary sector increased during the same period in all administrative-territorial units, one can notice that there are active especially those fields whose presence was absolutely necessary, such as trade, public administration, education and health, less transport and tourism, and very little banking, cultural, scientific and IT services. Câmpeni remains the only pole with a certain attractiveness by concentrating some tertiary and industrial activities (wood processing).

Although we analyzed only one case study, the reported situation in the Land of the Moți is representative to the entire mountain area of the Apuseni. Even if a risk situation, as striking as depopulation or population ageing, could not be detected, however, we must sound the alarm about the communities in the mountain area. Despite the obvious intensification of services, this area remains a weakly developed one, dominated by agriculture, but a less productive and a low yield one. In the natural conditions specific to mountain areas and taking into account the technical impediments to farming in these areas, this sector of activity, although dominant, is limited to subsistence. Other solutions must be found to revitalize the mountain area and to ensure that its population has a standard of living adequate to the standards of the 21<sup>st</sup> century.

### REFERENCES

- BENEDEK, J. (2002), *Riscurile umane* [Human Risks], in: SOROCOVSCI, V. (ed.), *Riscuri și Catastrofe* [Risks and Catastrophes], vol. I, Casa Cărții de Știință, Cluj-Napoca, pp. 43-54.
- BOȚAN, C. N. (2010), *Țara Moților. Studiu de geografie regională* [The Land of the Moți. Study of Regional Geography], Presa Universitară Clujeană, Cluj-Napoca.
- DRĂGAN, MAGDALENA (2011), *Reziliența sistemului regional Munții Apuseni* [Resilience of the Apuseni Mountains Regional System], Doctoral Thesis, Faculty of Geography, Babeș-Bolyai University, Cluj-Napoca.
- JOSAN, IOANA (2009), *Țara Silvaniei. Studiu de geografie regională* [The Land of Silvania. Study of Regional Geography], Editura Universității din Oradea, Oradea.
- MUREȘAN, GABRIELA-ALINA (2008), *Bordura Munților Apuseni cu Depresiunea Transilvaniei (sectorul Someșul Mic-Ampoi). Organizarea spațiului geografic* [The Border between the Apuseni Mountains and the Transylvania Depression (Someșul Mic-Ampoi sector). Organization of the Geographical Space], Casa Cărții de Știință, Cluj-Napoca.

- MUREȘAN, GABRIELA-ALINA (2014), *Geodemographic Risks within the Apuseni Mountains*, Studia Universitatis Babeș-Bolyai, Geographia, no. 1, pp. 117-126.
- MUREȘAN GABRIELA-ALINA, BOȚAN C. N. (2014), *Geo-Demographic Risks in the Apuseni Mountains. Demographic Ageing*, Romanian Review of Regional Studies, no. 2, pp. 67-74.
- NICOARĂ, L. (1999), *Geografia populației* [Geography of Population], Focul Viu, Cluj-Napoca.
- ROTARIU, T. (2004), *Riscuri demografice* [Demographic Risks], in: SOROCOVSCHI, V. (ed.), *Riscuri și Catastrofe* [Risks and Catastrophes], no. 1, Casa Cărții de Știință, pp. 173-189.
- SURD, V. (2004), *Geodemografie* [Geodemography], Faculty of Geography, Babeș-Bolyai University, Cluj-Napoca.
- SURD, V., ZOTIC, V., PUIU, V., MOLDOVAN, C. (2007), *Riscul demografic în Munții Apuseni* [Demographic Risks in the Apuseni Mountains], Presa Universitară Clujeană, Cluj-Napoca.
- \*\*\* (1994), *Recensământul populației și locuințelor din 7 ianuarie 1992, vol. II. Populație-Structura social-economică* [1992 Census, volume II: Population and Socio-Economic Structure], Comisia Națională pentru Statistică. Available at: <http://www.alba.insse.ro/cmsalba/rw/pages/index.ro.do;jsessionid=7a94a59dcd8e359822824b439db0815da6788083eec0fa07cbd444560f9ef365.e34Ma3mNaNATb40Lbh8Te0>. [Accessed 20 January 2014].