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Drivers of Change in Post-communist Agriculture in the Apuseni Mountains

The present paper consists of an analysis regarding the evolution of agriculture in the study area, in the post-communist period, and the main factors involved in this evolution.

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Introduction

MOUNTAIN RURAL areas in Romania have always faced specific challenges and problems raised by the difficult environment and the often harsh features of the landscape, to which farmers have adapted throughout time (Rey 1985). At the present moment these areas are under pressure because the lifestyle of the people is based on traditional productive activities (often with out-of-date means of farming) that are less efficient in terms of outcomes. This aspect is also directly related to the ongoing demographic decline in such regions, which is most often associated with a degradation of the agricultural landscapes due to the decrease in the number of farmers.

The Disadvantaged Mountain Area in Romania was legally defined in the national plans for rural development in order to provide some financial support meant to compensate for the lower productivity of the agricultural lands when compared to those located at lower altitudes. The criteria involved

in the selection of the Administrative-Territorial Units that would be part of the Disadvantaged Mountain Area (as outlined in Annex 4A of the National Rural Development Programme 2007–2013) were altitude and the declivity of the terrain. Thus, the communes located over 600 meters, or between 400 and 600 meters but overlaying slopes of more than 15° were included.

Our study area is constituted by the Disadvantaged Mountain Area located in the Apuseni Mountains (Western Carpathians), a part of the Romanian Carpathians. It is mostly a rural space, composed of 100 Administrative-Territorial Units (located in Alba, Arad, Bihor, Cluj and Hunedoara counties), covering a total surface of 958,024 ha. Nine towns are also included: Abrud, Aleșd, Baia de Arieș, Brad, Câmpești, Geoagiu, Nucet, Vașcău and Zlatna, most of them with significant agricultural features due to the high number of component villages. Although this is a mountain area, the geomorphic features are not excessively constraining (the highest altitude of the region is of 1,849 m) and agriculture still remains the main economic activity of the local population; there were 91,699 holdings for a population of 268,028 in 2010.

The present paper consists of an analysis regarding the evolution of agriculture in the study area, in the post-communist period, and the main factors involved in this evolution. The main focus is placed on systemic changes in the agrarian structure and in agricultural policies. However, these aspects were analyzed while also considering their permanent interaction with the specific local factors.

The data presented throughout the paper for the Disadvantaged Mountain Area in the Apuseni Mountains resulted from our calculations using data collected from different sources: the General Agricultural Census of 2010, 1985–1990 data regarding the communes, made available by the County Statistics Offices, various data covering the years 1990–2015 from the National Institute of Statistics (TEMPO-Online), lists and reports from the Agency for Funding Rural Investments (AFIR) and the Ministry of Agriculture and Rural Development (MADR, 2013).

In the process of data analysis certain correlations between different data sets were identified and further analyzed, as presented later on in the present paper. The data were also analyzed using a GIS software in order to outline the spatial distribution of the examined aspects.

General Features of the Agriculture in the Apuseni Mountains

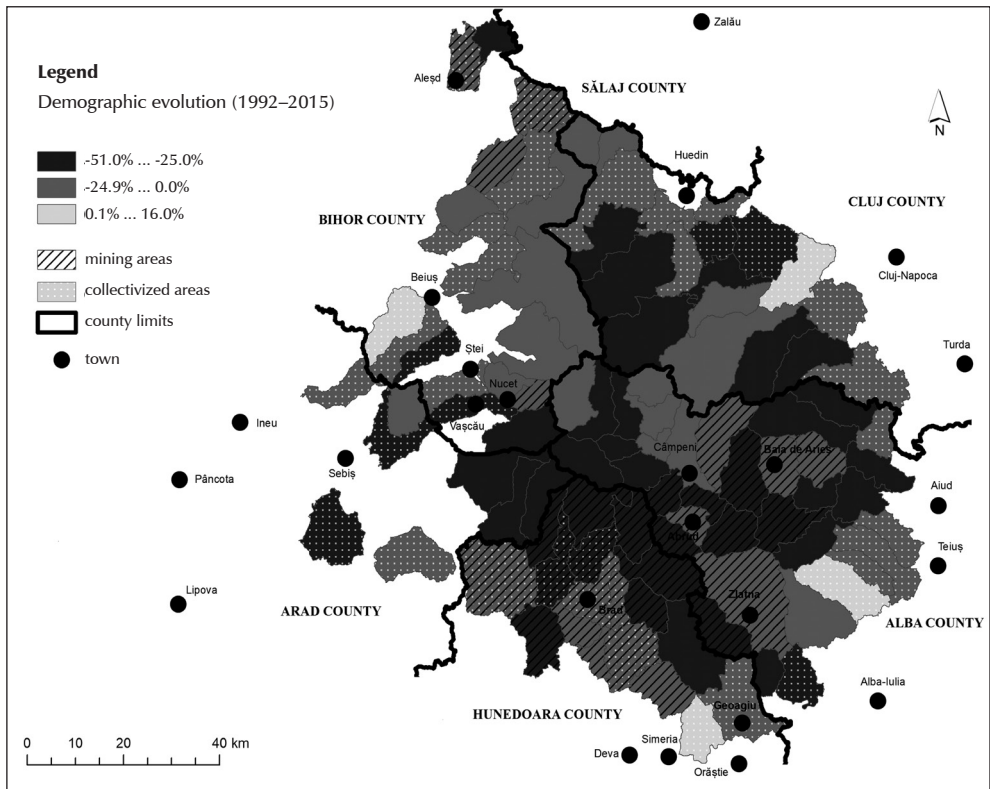
BETWEEN 1990 and 2014 the agricultural activity in the Apuseni Mountains recorded a significant setback, the land use intensity decline being reflected in the decrease of arable land by circa 15% (from 109,754 ha in 1990 to 93,531 ha in 2014) as well as the decrease of orchards by 70% (from 3,660 ha in 1990, to 1,130 ha in 2014) and of vineyards by 57% (from 870 ha in 1990 to 373 ha in 2014). Alongside the reduction of those areas used in a more intensive manner, the 2010 General Agricultural Census reveals large surfaces that had been declared non-utilized (38,176 ha), which represent 10% of the surveyed agricultural surface. Furthermore, for 17% of the arable surfaces included in agricultural holdings one can note a lowering in the intensity of usage. Agricultural surfaces in the Disadvantaged Mountain Area in the Apuseni Mountains are mainly constituted by hayfields and pastures (78.8% of the utilized agricultural area). However, these surfaces are underutilized as well because of the reduction of the livestock by half (from 155,687 in 1990 to 79,273 in 2010). At the time of the mentioned census only 29.3% of agricultural holdings also bred cattle.

Most households in the Apuseni Mountains still practice subsistence farming and have rather small surfaces—35.3% of farms use a maximum of one ha and 88.6% less than 5 ha. But this type of traditional farming is gradually losing importance; we can already see this phenomenon expressed in the 2010 General Agricultural Census in the amount of unused agricultural land. The phenomenon is quite significant, with the demographic dimension joining other factors such as the accessibility and agricultural potential of the territory. Thus, extreme situations have resulted, such as the cases of communes where about half of the agricultural area is not used (Mărgău, Valea Ierii, București). In other communes, such as Șuncuiuș, Mărișel, Ciucea, Căpușu Mare, Bulzeștii de Sus, Vorța, Râmeț, Ceru-Băcăinți, over a quarter of the agricultural area is unutilized.

The demographic decline (Fig. 1) had been a feature of the entire study area before 1990, but it accelerated in the last two decades, in this period the population decreasing by 19% (from 317,751 inhabitants in 1992 to 256,400 inhabitants in 2015). One can also note changes in the structure of the population in terms of the main age groups. Thus, between 1992 and 2014, the population in the 0–19 age group decreased by 43%, the share of population between 20 and 64 years of age decreased by 15% and the elderly population increased by 11%. This resulted in a higher percentage of aging population than the national

average (20% of the population over 65 years of age compared to the national average of 15% in 2014), with tendencies of exacerbation due to the acute decline of the 0–19 age group.

FIG. 1. FEATURES OF THE STUDY AREA—DEMOGRAPHIC DECLINE, MINING SITES AND COLLECTIVIZED COMMUNES



SOURCE: own calculations based on data from TEMPO-Online.

This tendency is specific to the entire Disadvantaged Mountain Area at national level, with repercussions on the agricultural exploitation of the territory. Around 60% of the farmers who applied for direct payments to the Agency for Payments and Intervention in Agriculture (APIA) in 2012 were over 60 years old, while farmers under 30 years represented only 8% (MADR, 2014).

Systemic Post-communist Changes: De-collectivization and Deindustrialization

ALTHOUGH THE study area presents some disadvantages because of its geographical features, in areas with more flat landscape and lower altitudes the suitable conditions for the collectivization of agriculture were met. Thus, 37 Administrative-Territorial Units were partially collectivized during the communist period (Fig. 1).

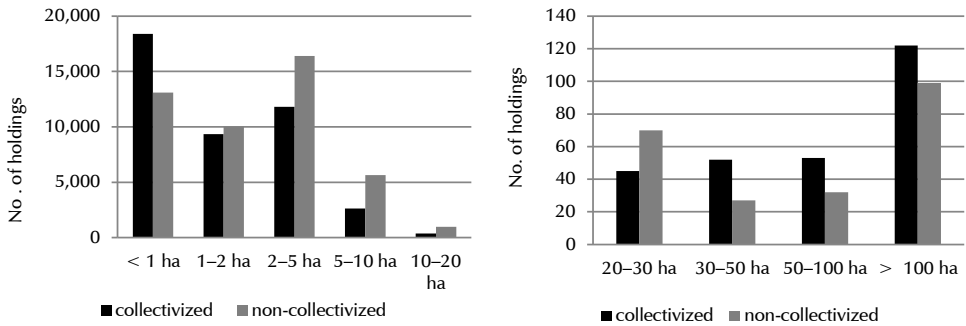
These communes underwent radical transformations in terms of the structure of the holdings. Such transformations were firstly determined by the establishment of agricultural production cooperatives during communism—which meant a merger of the most productive plots and the specialization of production. The fall of communism also meant the collapse of this system and was followed by changes in the agricultural structure due to the agrarian laws (18/1991, 1/2000, 247/2005) that gradually reestablished private property upon land (Bălteanu and Popovici 2010). From some points of view, these sets of laws were regarded as yet another setback for agricultural development, causing new productivity issues, due to the poor access to technologies for the new re-established farmers (Amblard et al. 2002; Otiman 2012).

Two different but simultaneous trajectories of the agricultural structure were noticed: the dismantling of the socialist farms of great dimensions resulting into many small holdings (Popovici et al. 2016) and the concentration of lands into large holdings (Mikulcak et al. 2015).

We have noted a similar trend in the Apuseni Mountains, when comparing the collectivized areas to the non-collectivized areas (where agricultural practices had a more linear evolution and the small dimensions of holdings and the subsistence character were maintained). While the collectivized and non-collectivized areas have a similar number of holdings, the collectivized communes displayed both a higher degree of disintegration of the structures as well as a higher concentration (Fig. 2).

Putting things into perspective, we have noted that large agricultural holdings were functioning in 2010 in a great share of the 37 communes where agricultural production cooperatives had functioned previously: in 25 communes we have identified agricultural holdings having over 10 ha of arable land, while in 15 their surfaces were greater than 50 ha. Moreover, the greatest surfaces of arable land are recorded in Galda de Jos (2,300.34 ha), Ighiu (959.02 ha), Stremț (616.37 ha), Geoagiu (1,098.67 ha) and Rapoltu Mare (627.67 ha), associated with the presence of agribusinesses.

FIG. 2. NUMBER OF AGRICULTURAL HOLDINGS BY SIZE CLASS, IN THE DISADVANTAGED MOUNTAIN AREA IN THE APUSENI MOUNTAINS



SOURCE: own calculation based on data from the 2010 General Agricultural Census.

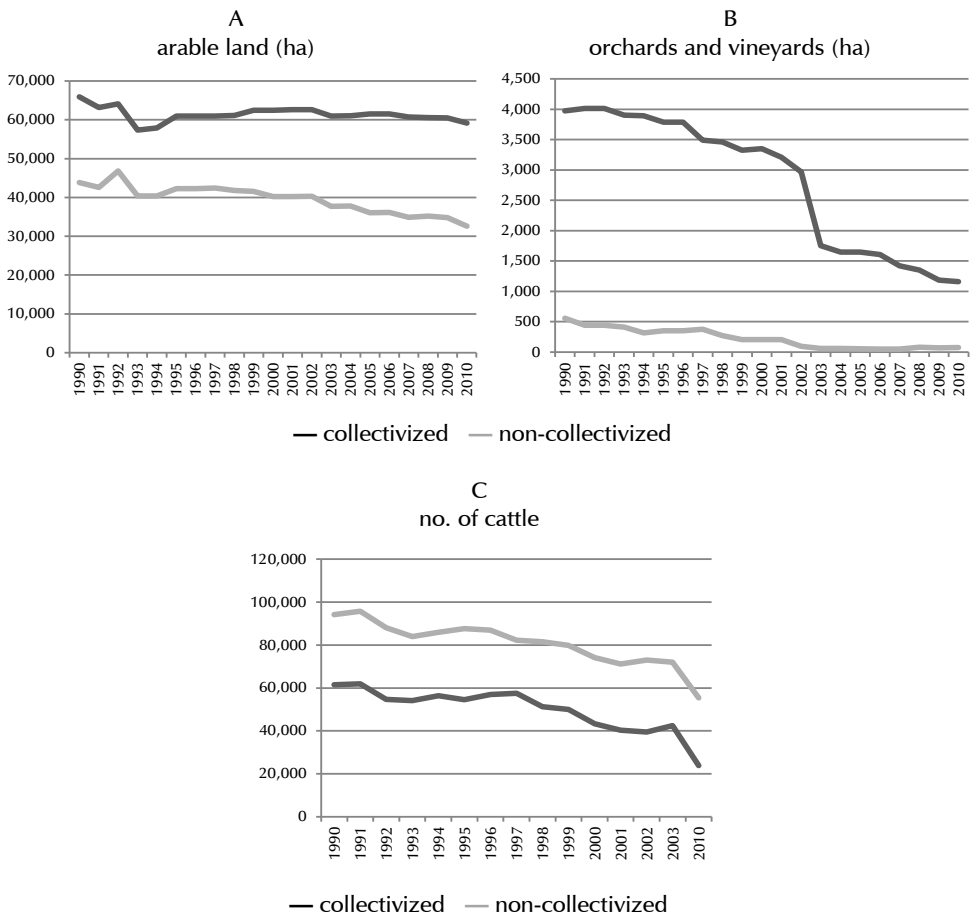
In spite of these changes reported in the agricultural structure, when analyzing the evolution of some agricultural indicators (Fig. 3), one can note that the situation was not dramatically different between the collectivized and non-collectivized communes. Of course there are some differences in regard to intensity or absolute values, but overall, the evolution of the two areas has not been out of sync.

Greater differences can be observed for the evolution of the areas of orchards and vineyards, while for the arable lands, although in the last few years we can observe a slight difference in their tendencies, the overall evolution has been quite similar. However, when it comes to the number of cattle, one can note an almost identical evolution. This suggests that collectivization and de-collectivization had a greater impact upon the structure of the agricultural lands than on the intensity of the agricultural activity.

These types of changes, directly related to agriculture, are not the only ones that have had an impact upon the evolution of agriculture, other structural changes in Romanian economy like deindustrialization and the shutdown of mining activities also contributing. 30 communes and small towns where mining had been an important activity or that were located near industrial centers were impacted the most in the study area. They are located in the Metaliferi Mountains around the perimeter Abrud-Roşia Montană-Brad-Crişcior and in some other locations: Borod-Şuncuiuş, Nucet-Băiţa, Aleşd etc.

However, even in these areas, for most households agriculture had always been a secondary activity. For example, in Roşia Montană, a traditional mining site, for a population of 4,002 inhabitants in 1992, the average number of employees was 1,453. Under these circumstances, the high number of cattle in the commune (2,045) seems surprising, especially when compared to other communes where

FIG. 3. EVOLUTION OF AGRICULTURAL INDICATORS IN THE COLLECTIVIZED AND NON-COLLECTIVIZED AREAS IN THE REGION:



SOURCE: own calculation based on data from TEMPO-Online and the 2010 General Agricultural Census.

the number of employees was much lower, but had similar surfaces of agricultural areas (Albac: 1,682 bovines, Arieșeni: 1,490 bovines, Scărișoara: 1,300 bovines).

Just as mining did not exclude agriculture as an activity at a communal level (except, of course, in the mining areas and their vicinity), neither did industry exclude agricultural practices, as observed in towns likes Zlatna, with several component villages. In this case, for a population of 9,330 in 1992 there were 4,847 employees (a high percentage being employed in mining and industry) while agriculture was still widely practiced, the arable land covering 2,646 ha.

The effects of the gradual reduction of the heavy industry and of mining activities were harshly felt in these areas, because of the large number of laid off employees, which also influenced the urban-rural migration in counties such as Alba and Hunedoara (Benedek and Török 2014). Between 1991 and 2006, the number of persons employed in the industrial and mining areas in the Apuseni Mountains decreased from 41,372 in 1991 to 22,678 in 2006, when most mines were closed down. In this context, for many households subsistence farming was a means of avoiding poverty (Luca 2013; Tudor 2015).

Recent Agricultural Policies

IN THE context of widespread subsistence farming, holdings found support and development opportunities in the more structured types of policies after the beginning of negotiations for the accession to the European Union, due to the fact that Romania was trying to assume the general objectives of the Common Agricultural Policy. These policies aimed at the efficiency of the agriculture and the promotion of a multifunctional agriculture, while also trying to respond to specific issues in Romania—the high percentage of elderly people involved in farming, low productivity, low quality standards, etc. A series of programs were launched, containing measures providing financial support and development opportunities for those farmers with a more entrepreneurial spirit.

The investments in the area covered by the SAPARD program supported the consolidation of the big producers and processors that were developed on the foundation of the former communist production units in Oiejdea (Galda de Jos commune), as well as the initiatives of the self-employed or family associations.

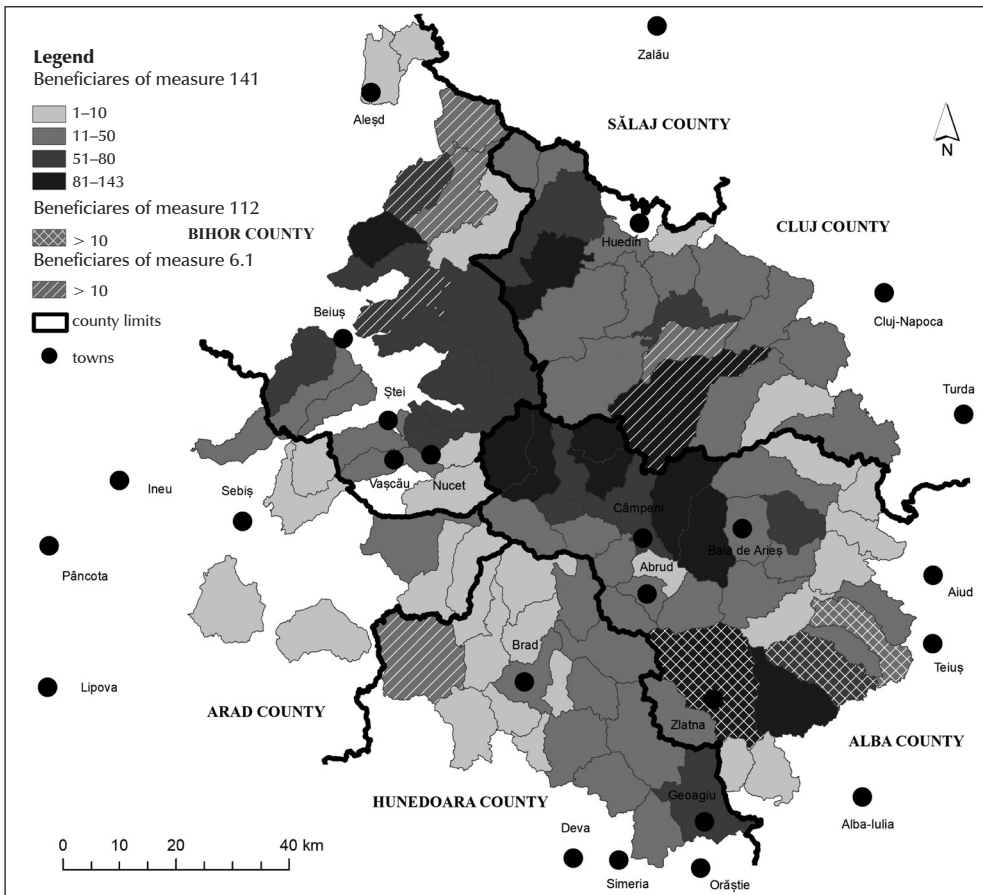
However, the measures meant to improve agriculture had less of an impact in the study area when compared to the other directions of development (particularly the diversification of economic activities). Thus in the agricultural domain two main measures were accessed and several projects were financed: Measure 1.1, Improvement of the processing and marketing of agricultural and fishery products (8 projects) and Measure 3.1, Investments in agricultural holdings (21 projects). Most projects regarded the acquisition of technological means necessary to meet the European quality standards.

The following financing opportunities, provided by the National Rural Development Programme 2007–2013, engaged more people in a more diverse range of activities.

Measure 141, aimed at supporting the semi-subsistence farms in their development and orientation towards the market, had the biggest impact from the point of view of the number of beneficiaries (Fig. 4). The implementation of

this measure led to a total of 3,617 projects being signed and financed in the entire period of the National Rural Development Programme (2007–2013) in our study area, where most households still practice subsistence farming.

FIG. 4. DISTRIBUTION OF PROJECTS FINANCED THROUGH MEASURES OF THE NATIONAL DEVELOPMENT PROGRAMS TARGETING AGRICULTURE



SOURCE: own calculations based on data from AFIR.

One can note a highly differentiated distribution of such projects, since 1,126 projects are concentrated in only 10 administrative units: Gârda de Sus, Săcuieu, Albac, Măguri-Răcățău, Lupșa, Bistra, Horea, Meteș, Arieșeni and Zlatna. A relatively large share of communes with a low number of implemented projects was also noted (28 communes with less than 10 projects between 2007 and 2013).

The fact that the spatial distribution of the projects is quite uneven can be easily observed on the map (Fig. 4), outlining of some areas with a higher concentration: along the Arieș Valley—between Bistra and Arieșeni, in the south of the Trascău Mountains—the Zlatna–Meteș–Ighiu area, in the Pădurea Craiului Mountains—Șuncuiuș–Roșia–Căbești. One can note that some of these areas overlap in part the development areas for rural tourism, especially the Arieș Valley and, to a smaller extent, the Meteș–Ighiu area. A fortunate complementarity has been observed between tourism and agriculture not only in what regards the touristic offer (the presence of farming activities being essential for rural tourism in terms of landscape and general appeal) but also because rural tourism represents a market for the local agricultural products. This is especially valid in the case of agritourism, which involves the use of local products in the preparation of the items in the menu.

The areas with fewer projects are mostly located in the southwestern part of the analyzed area, often overlapping the former industrialized and mining sites and communes with a higher aging population (Bulzeștii de Sus is a clear example of an area with an increased median age of the population that also presents a scarce accessibility, which is another discouraging factor).

Measure 112 aimed at supporting young farmers was another important measure, especially in our study area, where young people might otherwise have few lucrative opportunities. Projects have been implemented in 75 communes in the territory, but with relatively few beneficiaries at the communal level, most communes having three or less than three projects. We can easily note the same type of polarization as in the case of the previously analyzed measure, with six outstanding communes in the southeastern part of the region, namely, Galda de Jos, Zlatna, Ighiu, Meteș, Stremț and Cricău. Of the 262 projects financed in the area, nearly one third (82 projects) were implemented in these six communes.

We must also mention Measure 121 regarding the “Modernization of the agricultural holdings” and Measure 123 aiming at the “Increase of the added value of agricultural products,” although the number of projects was comparatively smaller (24 projects in total for both measures).

In the following National Rural Development Programme (2014–2020) an important measure for the agriculture in the area so far is the one regarding the young farmers—Sub-measure 6.1. The manner in which it covers the study area is maintained to a similar percentage as the corresponding measure in the National Rural Development Programme 2007–2013—76 communes out of 100. However we must underline the fact that the number of selected projects is slightly higher (289), while this situation is only an intermediate one (the time of the writing of this paper corresponding to the middle of the period of implementation of the development program).

Two areas with a higher concentration were outlined in Șuncuiuș–Bratca–Borod (communes that after the closure of the mines and deindustrialization faced difficulties) and Mărișel–Măguri Răcătău.

Quite the opposite situation could be observed for some other communes where the interest in measures regarding young farmers was low. Overlapping the maps containing the coverage of Measure 112 from the 2007–2013 National Rural Development Programme and Sub-measure 6.1 from the 2014–2020 National Rural Development Programme, we identified some cases in which there were no beneficiaries of these measures in any of these 10 years: Bulz, Arieșeni, Scărișoara, Horea, Avram Iancu, Poșaga, Ocoliș, Mogoș, Întregalde, and Râmeț.

For the villages located in the Upper Arieș Valley (Arieșeni, Scărișoara, Horea, Avram Iancu), the sources of income are more diversified, and there are many farmers that have actually applied for other types of support (Measure 141 of the 2007–2013 National Rural Development Programme), while many locals are also active in tourism and forestry. Thus, the absence of beneficiaries for this measure is not in any case worrisome.

However, one can note another low score in terms of projects in an area located in Alba County, consisting of the communes of Poșaga, Ocoliș, Râmeț, and Întregalde, where no project was financed through these measures. Moreover, in the National Rural Development Programme 2007–2013 these communes also had few beneficiaries in general, not only in what agriculture is concerned, i.e. in Ocoliș there were 6 financed projects and in Râmeț only 5. The situation doesn't look better under the current program, as on the list of submitted projects there are only two projects submitted so far from Ocoliș and one from Râmeț.

One explanation can be traced to the acute demographic decline in the area: in Poșaga the 2014 population being lower than in 1992 by 38.2%, in Ocoliș by 41.9%, in Râmeț by 49% and in Întregalde by 44.8%. A high percentage of the elderly population is also a contributing factor: 28% in Poșaga, 36% in Ocoliș, 36% in Râmeț, and 32% in Întregalde, in 2014.

We must also take into account the fact that all of the four communes are located in karstic areas with a rather rough morphology and fragmented landscape (karst ridges and gorges). Accessibility is rather limited in this area, especially for the smaller remote villages included in these communes, with obvious viability issues in some sectors (Drăgan and Cocean 2015).

Conclusions

THE EVOLUTION of agriculture in the Disadvantaged Mountain Area in the Apuseni Mountains reflects a descending trend similar to other mountain areas in Romania, characterized by a decline in land use intensity associated with a demographic crisis.

Although collectivization was intensely felt by the individuals and individual households that had been involved in this process, in our study area collectivization (and de-collectivization) as a factor of change did not have the impact that we might have assumed it had. It changed the structure of the agricultural lands, but it did not have an essential role in shaping the regional agricultural profile.

Even in the most representative mining areas, agriculture has always been a supporting activity, especially in the other villages included in such communes. Its role as an economic activity continued to grow after the closure of mines and deindustrialization left the former employees without many options in terms of paid work.

The spatial distribution and the success rate of agricultural policies stand out as indicators of the interactions and importance of the different drivers of change acting in the area and the results of their action. Different trajectories for the development of the local agriculture have thus resulted, ranging from degraded agricultural landscapes and aging communities disconnected from current positive developments, to agri-businesses managing hundreds of hectares of land, a successful conjunction of farming and tourism, and massive applications to access European funds.

Overall, we estimate that subsistence agriculture will gradually reduce its role even more in the study area because the farmers are elderly people, while the young do not want to strive and make a living through agriculture. Only the ones with a more entrepreneurial spirit and more oriented towards higher quality products will remain to practice agriculture, if properly supported by agricultural policies. □

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Abstract

Drivers of Change in Post-communist Agriculture in the Apuseni Mountains

After 1990, the agricultural activity in the Apuseni Mountains (Western Carpathians, Romania) has recorded a significant decrease reflected in the descending evolution of utilized agricultural area and of the livestock, and in the shift towards a more extensive use of the land. This situation is the result of several factors acting on different spatial and temporal scales, often interacting in various patterns. The fall of the communist regime also meant deep structural changes such as the dismantling of the communist agricultural system, deindustrialization and the shutdown of mining activities in several locations in the Apuseni Mountains. Other drivers of change are acting on a local level, such as demographic evolution, landscape features and the complementarity with other economic activities, causing different trajectories for the local agriculture. Starting with the accession to the European Union, the changes in the agricultural policies have meant financial support and development opportunities for many households in the area.

Keywords

subsistence farming, demographic decline, collectivization, agricultural policies, mountains, economic complementarity