

## CONSIDERATIONS REGARDING THE MOUNTAINOUS AREA OF ROMANIA: PRESENT AND PERSPECTIVES IN RELATION TO THE BREEDING ACTIVITY OF CATTLE

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### Abstract

*The paper aimed to present the situation of the mountain area in Romania between 2017 and 2019. This paper is based on statistical data provided by the National Sanitary-Veterinary Authority and for Food Safety and also by the National Institute of Statistics. These were processed within the National Agency of the Mountain Area in the following indicators: number of counties with mountain area, number of Administrative-Territorial Units in the mountain area, number of inhabitants in the mountain area, total area of the mountain area (km<sup>2</sup>), area of pastures and meadows in the mountain area (ha), the number of animals in the mountain area (cattle, sheep, goats, pigs). Compared with 2017, the number of animals, in 2019, registered significant decreases, which leads to negative effects on maintenance of permanent grassland areas in the mountain area, milk and meat production from animals, milk processing activities, respectively meat and, implicitly, reduced possibilities of developing farms in the mountain area.*

**Key words:** indicators, livestock, mountain area, permanent grassland, Romania.

### INTRODUCTION

The mountain is a very important source of air, water and food all over the world. Over 80% of the fresh water comes from the mountain area. In the world, mountains occupy 24% of the earth's surface, respectively 40 million km<sup>2</sup>. In the mountains, 12% of the world population lives, and 14% live in the immediate vicinity of the mountains. Europe is covered by 40% of the mountains, inhabited by 20% of the total population of this old continent (Ray R., 1985). Mountain areas are, in general, rural and are characterized by natural limitations of agricultural productivity, which lead to reduced agricultural production, caused by adverse climatic and biophysical conditions, under optimal conditions of agricultural activities (Law no. 197/2018 - Mountain law). The mountain area of Romania represents a disadvantaged national territory, with high economic, social, and cultural potential, which needs a different approach regarding the policies and strategy of development and protection of these mountain areas (Marușca T., 2018). The mountain area has extensive areas of meadows, most of them with a high natural value, maintained in this condition due to the

fact that, over time, a traditional, extensive agriculture based on the use has been practiced natural fertilizers (<http://www.madr.ro>).

In this context, the paper proposes an analysis of the evolution of the main indicators defining the mountain area of Romania, during the years 2017-2019, in particular, the emphasis is placed on the evolution of permanent grassland surfaces (meadows and pastures) and, respectively, on the evolution of livestock in the mountain area.

### MATERIALS AND METHODS

In order to characterize the situation of the mountain area in Romania, the following indicators were used: number of counties with mountain area, number of Administrative-Territorial Units in the mountain area, number of inhabitants in the mountain area, total area of the mountain area (km<sup>2</sup>), area of pastures and meadows in the mountain area (ha), the livestock in the mountain area (cattle, sheep, goats, pigs) (Statistical Yearbook of Romania 2016-2019, <http://www.insse.ro>). The period analyzed was 2017-2019, and the data were provided by the National Sanitary-Veterinary and Food Safety Authority and also by the

National Institute of Statistics; these data were processed within the National Agency of the Mountain Area.

## RESULTS AND DISCUSSIONS

The mountain area of Romania has a total area of 71,381.48 km<sup>2</sup>, and covers 658 Territorial Administrative Units, respectively 27 counties

with mountain area, which represents 30% of the territory of the country, of which 577 communes, 81 cities and municipalities and 3536 villages. The population of the mountain area is 3,354,041 inhabitants, which represents 16.5% of the country's population. The number of animals decreased in 2019 compared to 2017 (Figure 1 and Table 1).

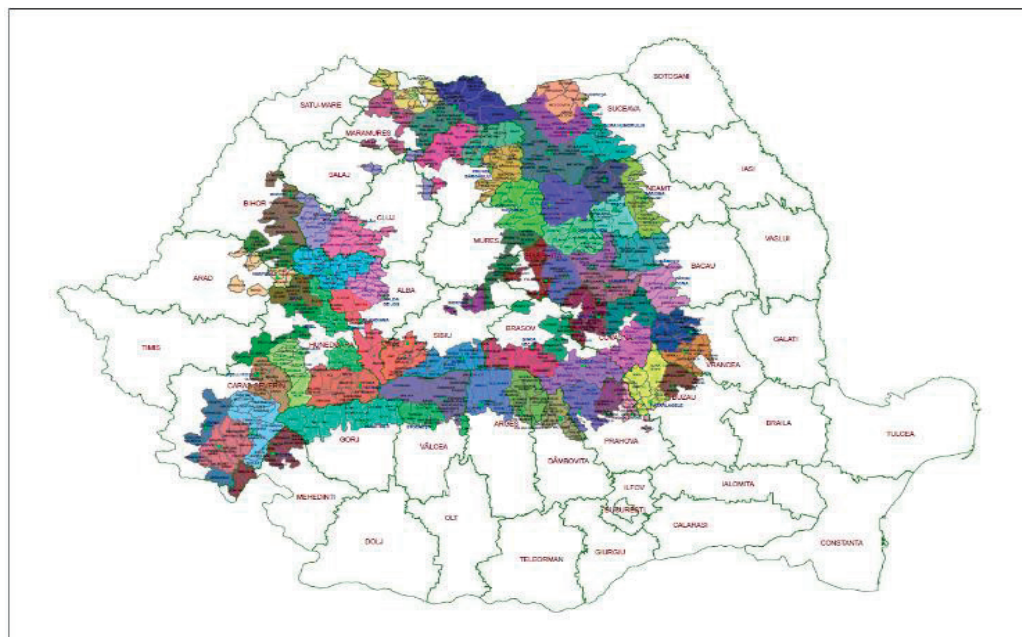


Figure 1. Representation of the mountain area in Romania with the 64 bioareas (mountain basins)

Table 1. Evolution of livestock and permanent grassland during the period 2017-2019 in the mountain area of Romania

Current number	Indicator name	2017	2018	2019
1.	Cattle (number)	653,069	634,882	614,303
2.	Sheep (number)	2,753,399	2,753,492	2,587,345
3.	Goats (number)	255,572	243,523	211,992
4.	Pigs (number)	260,054	198,848	254,509
5.	Area of pastures (ha)		1,232,415	
6.	Area of meadows (ha)		930,538	
7.	Agricultural land (ha)		2,738,428	
8.	Arable land (ha)		528,046	
9.	Orchards(ha)		43,789	
10.	Other (ha)		4,399,720	

Source: National Agency of the Mountain Area

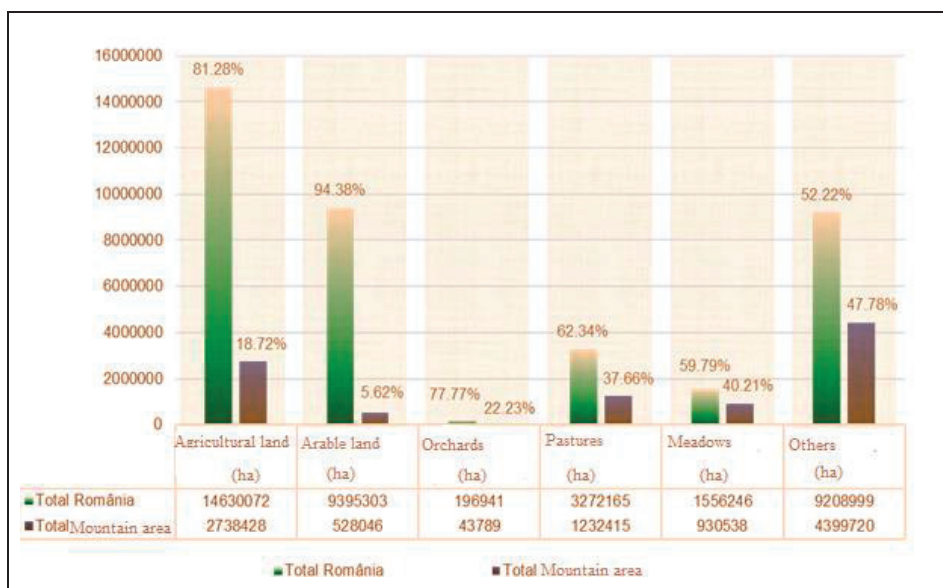


Figure 2. Use of agricultural land in the mountain area of Romania

The decrease of the livestock in the mountain area is based on several shortcomings, such as:

- the abandonment of the mountain localities by the young population and the migration to the urban areas of the country or abroad;
- lack of jobs;
- lack of counseling of young farmers who took over the farm from their parents;
- the lack of professional schools with agricultural profile in the mountain area, which will prepare the future generations of farmers;
- mountain farms are poorly equipped and mechanized, which leads to higher energy consumption, labor force and additional costs;
- reduced possibilities of capitalizing on the products obtained on the farm.

The surface of permanent grassland was maintained at the level of January 1, 2007, as provided in the first paragraph in art. 6 of Regulation (EC) no. 73/2009 of the Council of January 19, 2009. Local resources in the mountain area are represented by: forest resources, mineral deposits, mineral water, mountain tourism (ecotourism, agro-tourism, cultural tourism), pastoral heritage represented by:

a) permanent grassland meadows;  
 b) temporary or sown meadows in arable land;  
 c) clever arable streams, fruit tree plantations;  
 d) woody vegetation with shrubs and trees;

e) aquatic vegetation with hydrophilic plants.

According to the current statistical data, mountain agriculture is mainly practiced in small and very small farms (under 2 ha), the main activity being the raising of animals (cattle, sheep, goats) for milk and meat. The land fund (Figure 2) comprises about 7.3 million ha, of which, about 4.0 million ha forest fund and 2.09 million ha agricultural area, representing 15.44% of the total agricultural area of Romania (14, 6 thousand ha). The arable land in the mountain area occupies about 0.52 million ha, representing 5.62% of the total arable area of the country. The pastures located on the territory of the mountain area occupy approximately 1.2 million ha of the total area of the country, representing 37.66% of the total area of the pastures in the country. The meadows in the mountain area cover an area of approximately 0.9 million ha, representing 59.79% of the total area of the meadows in the country. Regarding permanent grasslands, it should be noted that they have several functions listed below.

1. Provides feed requirements for at least 60% of cattle and 80% of sheep.

2. The economic function, which refers to all the related activities that result from the use and capitalization of the pastures (processing of animal products, collection of medicinal flora,

- beekeeping, energy biomass, etc.).
3. Pastures as a source of efficient and high quality animal production (milk, meat).
  4. Pastures as a source of medicinal plants with phytotherapeutic properties.
  5. Lawn as a source of biologically fixed nitrogen production (perennial or annual legume crops).
  6. The grassland as a function of habitat for wild animals and for the conservation of the biodiversity of plant and animal species.
  7. The ecological function of soil protection against erosion and conservation of natural space.
  8. Landscape function, given by the diversity of plant species that ennobles and beautifies the environment.

Considering all these functions of the permanent grasslands, it must be said that their maintenance is vital for the mountain area; therefore, it is desired to manage them as efficiently as possible by tearing animals (sheep, goats) and administering the manure obtained from cattle within limits that do not negatively influence the grass carpet, the cleaning of cloves, mackerel, woody vegetation.

In the mountain area, a factor generating natural handicaps is the altitude at which the lands are located, which diminishes the possibilities of economic development in the case of certain relief steps, but this disadvantage can be compensated by the tourist potential, considering that these areas are holders of true values of natural and cultural heritage and, due to their isolation over time, have remained the keepers of the Romanian traditions.

The mountain area is recognized for its low pollution level, which gives food from this area an added value, already accepted on the market. The producers, growers and beekeepers who carry out their production activity in the mountain area will have to, but help in the activities of promoting food to the general public. The products from the mountain area, according to the specialists (Maciuc et al., 2003), are healthier and far superior to what is presently on the market, by the fact that, in this area, animal feed, pastures and meadows present a diverse range of valuable nutritious plants., including medicinal plants.

The main resource for the economic and social development of the mountain area is the product obtained "from the mountain". Mountain, traditional, ecological and quality products have a great capacity to contribute to the development of local communities, from an economic and social point of view, and to raise awareness of farmers and the general public about their economic potential and the importance of maintaining biodiversity (Maciuc, 2006). Traditional agricultural practices represent the starting point for the sustainable development of the mountain area. In this sense, we propose some directions of action:

- improving the mountain legislation that will stimulate and support the population in the mountain area;
  - promoting among the children the ancient teaching skills, crafts and old habits;
  - equipping traditional households with modern equipment and machinery;
  - support and concern for the development of agro-mountain education;
  - providing consultancy and technical assistance for setting up professional organizations (associations, cooperatives, foundations);
  - obtaining the mention of optional quality "mountain product" by a large number of farmers in the mountain area;
  - rehabilitation of permanent grasslands degraded due to overgrowth, or delayed mowing of pastures;
  - promoting ruminant species with economic interest, which does not compete with humans and especially cattle, with the two milk and meat productions in order to efficiently capitalize the pasture and increase the profitability of traditional households.
- Cattle value and transform efficiently into milk and meat natural resources (pastures, meadows, agricultural by-products), as well as different residues (Maciuc et al., 2005), participate in the intensification and profitability of traditional households both through the productions we obtain, but also through the mountain product. It also represents an important source of convertible currencies (through the export of meat, meat and milk products, live animals, frozen semen (MSC) and frozen embryos).

The mention of optional quality "mountain product" is required for:

- to stimulate the development of the mountain area and to add value;
- avoids any deception on the consumer by misusing the word "mountain" and to remedy the market distortion caused by the sale of "mountain" products which are not in reality "mountain";
- increases the competitiveness of mountain agricultural systems.

The milk law project aims to regulate the marketing of dairy products, to increase consumer confidence in domestic dairy products and to eliminate falsified products (Coman et al., 2019).

## CONCLUSIONS

Considering that the main agricultural activity in the mountain area is related to the breeding of animals, it can be observed that the number of animals (cattle, sheep, goats, pigs) decreased significantly during the period 2017-2019 with a negative impact on the agricultural economy, maintenance of permanent mountain pastures, milk and meat production from animals, milk processing activities, meat, biodiversity, environment, integrity of pastoral landscapes, population health and, implicitly, presents reduced opportunities for farm development in the mountain area.

As a consequence, we can say that, the mountain area of Romania needs special programs to support and encourage the breeding of animals, programs for installing young farmers in farms, to encourage the development of agricultural and non-agricultural activities in the mountain area.

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- \*\*\* Order no 52/2017 regarding the approval of the Procedure for verifying the conformity of the data contained in the specifications for granting the right to use the optional mention of "mountain product" quality and for verifying the compliance with the European and national legislation by the economic operators who have obtained the right to use the term.
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