STUDY ON ANIMAL BREEDING IN THE MOUNTAIN AREA OF ROMANIA IN RELATION TO THE DISTRIBUTION OF COLLECTION CENTERS AND MILK PROCESSING UNITS

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Abstract

The paper aims to present the situation of animal husbandry activity in the counties with mountain area in Romania, in 2019, in relation to the activity of milk collection and processing in the 27 counties with mountain area. This paper is based on statistical data provided by the National Sanitary-Veterinary and Food Safety Authority, the National Institute of Statistics and the National Agency for Mountain Area (ANZM). These data were statistically processed within the National Agency for Mountain Area in the following indicators: number of counties with mountain area, number of administrative-territorial units in the mountain area, total area of the mountain area (km^2), number of animals in the mountain area (cattle, sheep, goats) in 2019, the total area of permanent meadows in the mountain area (ha), number of milk collection centers in the counties with mountain area, number of milk processing units in the counties with mountain area. The statistically processed data show that in counties with large herds of animals there are milk processing centers and units compared to counties with small herds of animals that do not have centers and units of milk processing or are few.

Key words: animal husbandry, milk colection center, milk processing units.

I NTRODUCTION

The disadvantaged mountainous area of Romania is a special territory of national interest, with a huge economic, social, cultural and environmental potential. The strategic guidelines present the main directions to ensure the increase of attractiveness and sustainable development of the disadvantaged mountain area, by valuing resources, stabilizing the population, maintaining cultural identity, increasing economic power at local level, while maintaining ecological balance and protecting the environment. By achieving the established objectives, the sustainable economic, social and environmental development of the disadvantaged mountain area will be achieved by protecting and responsibly capitalizing on mountain resources, taking into account the effects of climate change, preventing depopulation of these areas and degradation of traditions, occupations and cultural specificity. theirs. Ensuring the means for the balanced development of mountain resources, on par with other areas in Romania and the EU, in terms of income and living conditions, must benefit from intense preventive and effective support from the state. Mountain areas must benefit from a specific policy defined according to the principles of sustainable development, which ensures the needs of the present without compromising the chances of future generations. The strategic guidelines also aim to reduce the imbalance between the more favored and disadvantaged mountain regions, marked by permanent natural constraints, targeting the whole economic problem, social, cultural and environmental issues. Mountain policies must facilitate inter-municipal and inter-regional cooperation within the national framework, cross-border and trans-national cooperation (National Strategic Guidelines for the Sustainable Development of the Disadvantaged Mountain Area, 2014-2020).

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, total area of the mountain area (km^2), number of animals in the mountain area (cattle, sheep , goats, Statistical Yearbook of Romania 2019, http://www.insse.ro), number of milk collection centers in mountain counties, number of milk processing units in mountain counties (ANSVSA-2019). The analyzed period was 2019, and the data were provided by the National Sanitary-Veterinary Authority and for Food Safety and also by the National Institute of Statistics. The primary data were systematized, processed and interpreted by methods specific to such research (, ± s, s, V%, p significance test, confidence interval). It is recommended that the estimation of a theoretical parameter be done by means of an interval not of a single value. This interval is called the confidence interval. The estimated parameter most likely belongs to the confidence interval. A string of values of an estimator of interest calculated so that for a

chosen error probability to include the true values of the variable. The range defined by the critical values will include the population estimator with a probability of 1-α. Also, the data analysis was done in terms of merging and correlating with numerous field observations. These data were processed within the National Agency for Mountain Area.

RESULTS AND DISCUSSIONS

The mountainous area of Romania (Figure 1) has a total area of 71,381.48 km^2, and includes 658 Territorial Administrative Units, respectively 27 counties with mountainous area (Table 1), which represents 30% of the country's territory, of which 577 communes, 81 cities and municipalities and 3536 villages. The surface of permanent meadows in the counties with mountainous area is 4,154,663 ha. The herds of animals from the mountainous area of Romania are presented in Table 1.
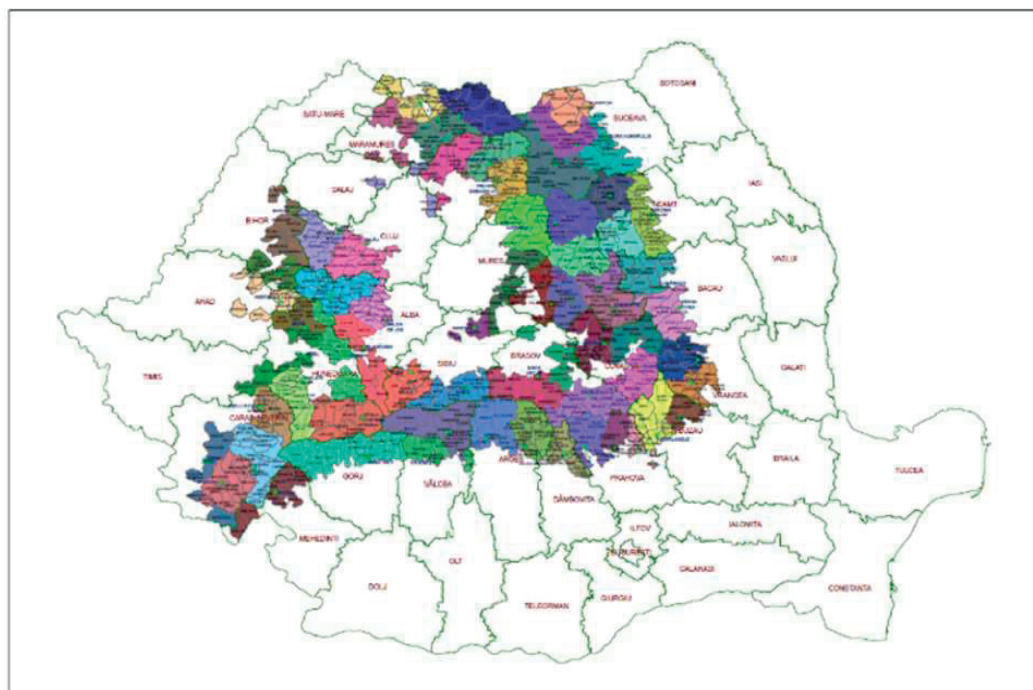

Figure 1. Mountain area of Romania

Table 1. The situation of the livestock, of the surface of permanent meadows and of the milk collection and processing center at the level of the counties with mountainous area in Romania (ANSVSA - 2019 source)

No. crt.	Mountainous county	Cattle	Sheep	Goats	Permanent meadows	Milk collection centers	Milk processing units
1.	ALBA	94,449	506,724	32,247	187,990	27	7
2.	ARAD	54,043	725,057	26,166	135,077	2	8
3.	ARGEȘ	58,686	218,201	35,720	146,898	2	4
4.	BACĂU	58,544	223,004	86,986	125,826		2
5.	BIHOR	73,357	443,381	26,841	172,209	11	4
6.	BISTRIȚA-NĂSĂUD	76,034	414,058	29,622	190,212	75	6
7.	BRAȘOV	66,365	545,894	18,509	159,384	9	6
8.	BUZĂU	52,781	290,921	54,474	119,930	1	3
9.	CARAȘ-SEVERIN	29,022	314,897	16,181	255,741		1
10.	CLUJ	63,278	607,516	28,564	245,482	52	9
11.	COVASNA	46,675	238,422	9,259	102,196	71	2
12.	DÂMBOVIȚA	31,038	67,316	32,980	62,503	2	3
13.	GORJ	45,908	141,496	37,045	128,897	2	2
14.	HARGHITA	89,602	245,556	21,960	316,124	67	10
15.	HUNEDOARA	42,925	294,505	23,155	201,217	1	3
16.	MARAMUREȘ	85,523	278,744	32,871	217,907	60	7
17.	MEHEDINȚI	30,379	135,826	80,438	92,764		1
18.	MUREȘ	78,285	504,200	38,213	183,519	86	12
19.	NEAMȚ	71,565	214,236	40,277	110,428	13	3
20.	PRAHOVA	43,866	253,400	50,444	108,395		3
21.	SĂLAJ	26,008	337,132	21,251	110,999	16	
22.	SATU MARE	44,149	260,586	15,986	75,649	12	5
23.	SIBIU	52,885	658,153	32,118	177,235	12	3
24.	SUCEAVA	128,038	256,875	19,474	164,691	113	16
25.	TIMIȘ	43,227	795,943	22,725	147,303	19	4
26.	VÂLCEA	42,320	120,588	28,113	139,425		1
27.	VRANCEA	46,078	170,754	43,939	7,6662		2
28.	TOTAL	1,575,030	9,263,385	905,558	4,154,663	653	127

In Table 1 we can see that the number of animals in the counties with mountainous area varies from one county to another, the largest number of cattle is registered in Suceava county 128,038 heads, followed by Alba county, with 94,449 heads, Harghita with 89,602 heads, Maramureș with 85,523 heads, Mureș with 78,285 heads, Bistrița-Năsăud with 76,034 heads. It should be mentioned that Suceava County occupies the first place in cattle

herds for a long time and the explanation lies in the fact that the species has productions such as milk and meat, which are capitalized in the form of mountain products, being herbivorous capitalizes very well feed in the mountains. Of course, the largest flocks of sheep and goats are found in counties with tradition and a special form of relief that favors the exploitation of these species. Therefore sheep herds in the counties with mountain area it is presented as follows: Timiș county with 795,943 heads, Arad with 725,057 heads, Sibiu with 658,153 heads, Cluj with 607,516 heads, Alba with 506,724 heads, Mureș with 504,200 heads. Regarding the goat herds in the counties with mountain area, the highest number was registered in Bacău county with 86,986 heads,

Mehedinți with 80,438 heads, Buzău with 54,474 heads and Prahova with 50,444 heads. The herds of animals are positively correlated with the surface of permanent meadows in the counties with mountainous area. The largest areas of permanent meadows are found in Harghita County (316,124 ha) (Figure 2). Table 1 shows that the counties with mountain areas in Romania that have the largest herds of cattle have the most collection centers and milk processing units such as: Suceava with 113 milk collection centers (Figure 3) and 16 processing units (Figure 4), Mureș with 86 collection centers and 12 milk processing units, Bistrița-Năsăud with 75 collection centers and 6 milk processing units, Harghita with 67 collection centers and 10 milk processing centers, Cluj with 52 collection centers and 9 milk processing units, Alba with 27 collection centers and 7 milk processing units. The positive correlation between cattle herds and the number of collection centers and milk processing units is explained by the fact that the bovine species has a monopoly on milk production, providing over 93% of world and national milk production. Therefore, milk must be processed and recovered in terms of economic efficiency. A general expression of economic efficiency is given by the relationship between the useful effects obtained from a certain economic activity and the expenses, ie the efforts made from that activity. The fewest milk collection centers and processing units are located in Bacău, Caraș-Severin, Dâmbovița, Gorj, Mehedinți, Vâlcea, Vrancea, because the number of animals in these regions is low. In Neamț County, there was a decrease in cattle herd of approximately 15% during the years 2010-2018 owned by the population in the area. This reduction was determined by: the extremely small size of the farms (1-2 heads) and the massive slaughter of animals (Nistor-Anton & Maciuc, 2019). 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).
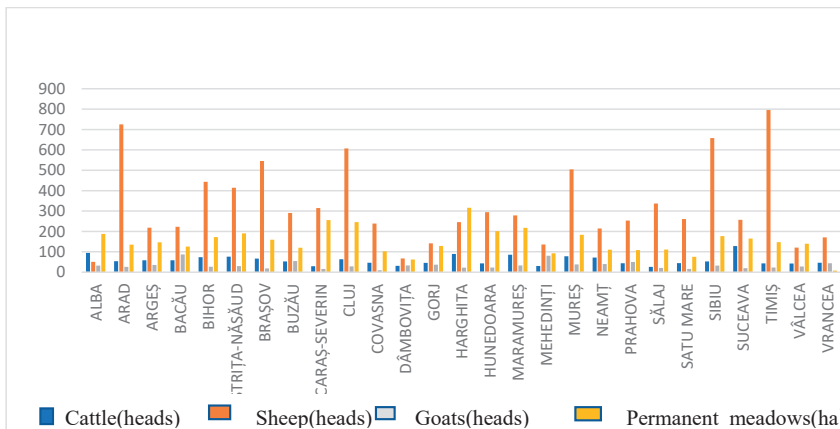

Figure 2 .The situation of the herds of animals and of the surface of permanent meadows in the counties with mountainous area from Romania
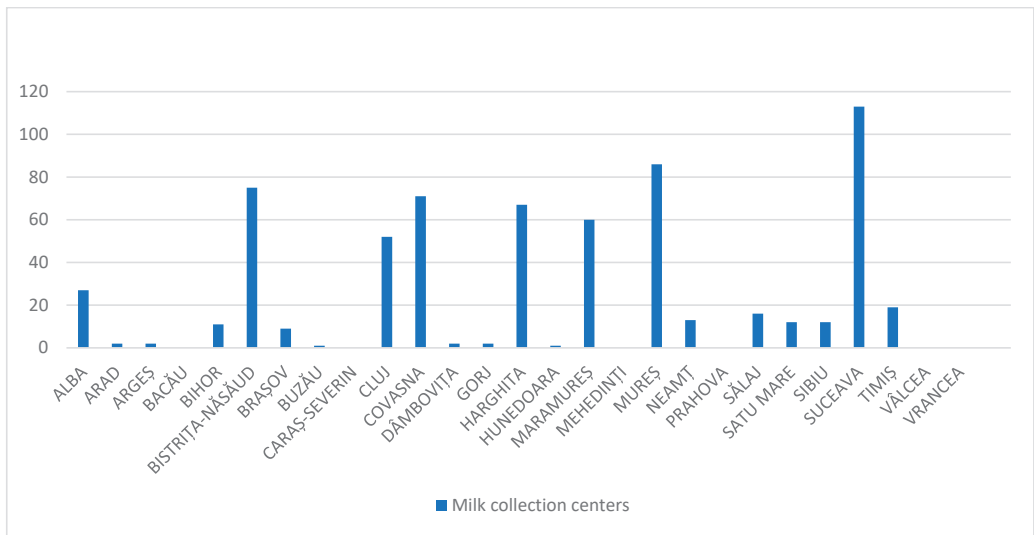
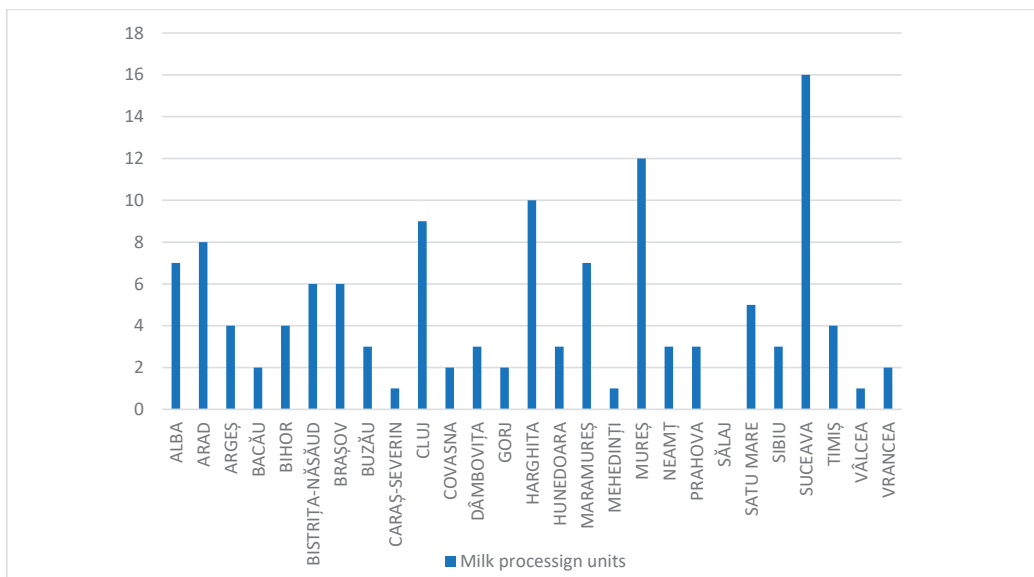Figure 3. Distribution of milk collection centers in the mountainous area of Romania

Figure 4. Distribution of milk processing units in the mountainous area of Romania

CONCLUSIONS

From the study, the following conclusions can be drawn:

1. The largest herds of cattle were registered in Suceava County, in sheep in Timiş, Arad and Sibiu counties, and in goats in Bacău, Mehedinţi, Buzău and Prahova counties.

2. The positive correlation between bovine herds and the number of collection centers and milk processing units is explained by the fact that the bovine species has a monopoly on milk production, providing over 93% of world and national milk production. Therefore, this milk must be processed and used in conditions of economic efficiency.

3. The herds of animals are positively correlated with the surface of permanent meadows in the counties with mountainous area. The largest areas of permanent meadows are found in Harghita County (316,124 ha).

4. The predominant increase of cattle in the mentioned counties, with each passing day, becomes more and more difficult due to the fact that the population is aging, the young population has migrated to cities or even abroad, the price of milk is very low (0.60-0.85 lei/liter), being brought to the milk processing units large quantities of milk from outside Romania at lower prices. Mountain farms have small areas, farmers not being able to negotiate the price of milk with processors.

5. We want to organize farmers in cooperatives, producer groups in order to sell at a better price the milk obtained from animals, a better price for animals delivered to the slaughterhouse, the use of farm products in the form of "mountain product". Accordingly, mountain farmers must be supported by government programs to encourage young farmers to grant, subsidizing the price of milk and meat, to ensure the continuity of this animal husbandry activity in the mountainous area of Romania, but also to avoid degradation of areas of permanent meadows in the mountain area.

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