THE EVOLUTION OF CATTLE HERDS IN ROMANIA IN THE PERIOD 2017-2021. CASE STUDY NORTH WEST REGION PERIOD 2017-2021

Andrei-Rares TIRPE[1], Anett VERES[1], Nicoleta-Irina CRECAN (LETEA) [1], Cristina Maria MAERESCU [1], Aurelia Ioana CHEREJI[1#],

[1] University of Oradea, Faculty of Environmental Protection, 26 Gen. Magheru St., 410048, Oradea, Bihor county, Romania

RESEARCH ARTICLE

Abstract

The cattle herds have known a constant decline in the period 2017 – 2021, even though it is a slow and manageable decline. The situation is not dramatic as Romania has a high natural potential to promote the development of cattle herds related activities yet we need to have a series of concentrated and harmonized measures. Some of the problems are transversal such as the decline in available workforce or the increased environmental standards that need to be put into practice. The North West region has shown a similar evolution in that period with to particular specific problem in its own. We need to focus on the potential of this sector and have an integrated approach that is doable in the current context.

INTRODUCTION

The EU is a major producer of beef and veal, with a total herd of around 78 million cattle. The EU supports farmers through income support payments (European Commission, DG Agri, 2022). The worldwide human population increasing number is reflected in higher needs for food, mainly meat and dairy products. Animal production yield should stand on this trend (Socol, Maerescu, 2020).

Romania has a great natural potential as regards the development of livestock industry that would permit both the internal market development as well as an active export based industry (Maerescu et al, 2018)

In Romania, raising cattle is a traditional activity for the population in the countryside and especially in the mountain area (Chiurciu et al, 2022). Meat consumption in Romania is 7 kg per capita per year, the demand for beef increases significantly in Romania, being a large deficit of high quality animal protein (Cioran, Maciuc 2021).

According to the information available online on the website of the Ministry of Agriculture and Rural Development, it is highlighted that there is the possibility of production to cover the domestic and export needs of beef, which would bring high incomes to the producers. At the same time, beef represents a source for commercial exchanges. (MADR, 2023)

The beef and baby beef does not really represent a traditional product in Romania and that is why only 15-16% of the total quantity of consumed meat in Romania belongs to this category, as the raising of bovines is rather linked to the production of milk and dairy products (Grodea, 2015).

The products resulting from cattle breeding represent the staple food for the majority of the rural population. Due to the economic potential, in recent years more and more cattle farms have been developed, which aim to produce and sell food products of animal origin (Buliga Ştefănescu, 2019).

The beef industry is facing unprecedented challenges related to animal welfare, environmental impact, origin, authenticity, nutritional benefits and eating quality of beef (Hocquette et al, 2018).

Nowadays, globally, beef is very sought after pork, there is a huge discrepancy between beef supply and demand, highlighting the fact that one could start profitable business in breeding cattle field (Soare, 2015).

The purpose of the paper is to highlight the evolution of cattle herds at the national level for the period 2017-2021 with an emphasis on the North West region. This was done to

correlate changes in cattle herds at the regional level with the national level and to present some causes of the decrease in the number of cattle.

MATERIAL AND METHOD

In order to carry out this study, the research was an office type. The specialized literature on the topic addressed was studied, in order to create an overview of cattle breeding in Romania. In order to answer the purpose of this study, the google scholar platform was used and recent works with a clear reference to the topic addressed were selected.

At the same time, a quantitative analysis was carried out by processing the information available on the website of the National Institute of Statistics (INS), using tempo online. The information thus collected was centralized, processed and interpreted. In order to process the statistical data, the Excel program was used. Indicators such as:

- cattle herds at national level for the years 2017-2021;
- cattle numbers by region for the period 2017-2021;
- cattle numbers at the level of the North West region for the years 2017-2021.

RESULTS AND DISCUSSIONS

Currently, Romania has pastures and has the possibilities of raising beef cattle in an extensive system, but it still does not exploit them to their true potential (Chiurciu et al, 2022).

It is known that the animal husbandry sector has been in permanent decline, which is also due to the difficulty of the legislation related to the conditions regarding the breeding of animals from the perspective of environmental protection.

At the end of 1990, according to information available on the INS, the number of cattle at the national level exceeded 5.3 million heads, to reach 1.82 million heads at the end of 2021. Thus, the number of cattle has decreased nationally by more than 65% in the last 30 years. (INS)

According to a study carried out in 2019, the North-East region is the highest rated in terms of the number of bovine animals per 100 ha, for the entire period 2007-2018. If in 2007 there were 35.1 cattle, in 2018 there were only 26.2. The North-West and Center regions had 23.8 and 22.6 cattle per 100 ha respectively, reaching 21 and 19.9 cattle respectively in 2018 (Buliga Ștefănescu, 2019).

It can be seen from table 1, the constant decrease in the number of cattle at the national level and in the analyzed period 2017-2021, in total the herds decreased by 184.2 thousand heads. The largest decrease in the number of cattle at the level of 2021 compared to 2017 was recorded in the North-East Region, with approximately 77.5 thousand heads. The only Region where an increase in the number of cattle is highlighted is the Center region, although in 2018 and 2019 respectively a decrease in the number of cattle was observed, starting with 2020 it increased, and at the level of 2021, the increase was by 26 ,6 thousand heads compared to the end of 2017. At the same time, in 2021, the Center Region occupied the first place at the national level in terms of sheep herds (Presentation of the Center Region, 2022).

Table 1

Macroregions, development regions and counties	Cattle numbers at national and regional level in the period 2017-2021					
	Year 2017	Year 2018	Year 2019	Year 2020	Year I 2021	2021-2017
	UM: Number					
	Number	Number	Number	Number	Number	
TOTAL	2.011.128	1.977.232	1.923.283	1.875.169	1.826.845	-184.283
NORTH-WEST region	366.228	365.417	368.869	361.401	355.134	-11.094
CENTER region	347.406	345.677	341.006	353.405	374.049	26.643
NORTH-EAST region	499.701	486.461	466.332	455.375	422.272	-77.429
SOUTH-EAST region	229.707	230.341	216.180	190.727	190.110	-39.597
SUD-MUNTENIA region	225.741	215.546	206.225	195.536	185.314	-40.427
SOUTH-WEST OLTENIA region	178.267	173.172	165.289	160.028	144.262	-34.005
WEST region	157.285	155.409	154.830	154.239	151.952	-5.333

Source: Processing after the National Institute of Statistics

In order to answer the purpose of this paper, we continued with the analysis of the North West region regarding the dynamics of cattle herds in the period 2017-2021 in order to highlight the changes in their number and if they follow the downward trend encountered at the national level.

The North West region consists of the counties of Bihor, Bistriţa Năsăud, Cluj, Maramureş, Satu Mare, Sălaj.

The agricultural area covers over 2 million hectares (61.3% of the total area), the largest area being owned by Bihor County (23.6%), and the smallest - by Sălaj (11.5%). The region differs from others in the country in terms of the share of arable land in total agricultural land: 49.4%, against a national average of 64.1%. As for areas of pastures and hayfields, the area ranks second, with some of the most extensive lands in Romania suitable for raising animals. In fact, in 2017, the North-West region was the second largest breeder of cattle (366,228 heads) and sheep (1,679,514 heads), after the North-East, respectively the Centre. (Agro Business, 2019)

Figure 1 Map of Romania, NW region (www.trb.ro)

Table 2

North West Region	Cattle numbers at the level of the North West region in the period 2017-2021					% county from % region 2021
	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	
	UM: Number					
	Number	Number	Number	Number	Number	
North West Region	366.228	365.417	368.869	361.401	355.134	100
Bihor	74.523	72.792	72.613	75.029	74.363	21
Bistrita-Nasaud	73.474	73.717	77.791	73.092	73.897	21
Cluj	63.482	66.983	66.493	64.507	63.294	18
Maramures	79.510	76.557	74.219	73.393	68.400	19
Satu Mare	46.137	46.037	48.893	47.678	46.497	13
Salaj	29.102	29.331	28.860	27.702	28.683	8

Source: Processing after the National Institute of Statistics

In 2018, the Northwest Development Region, compared to other regions in Romania, ranks second in the number of cattle, cows, buffaloes and heifers, sheep, sheep and goats (PDR Northwest 2021-2027).

Table 3

North West Region	Highlighting changes in cattle herds at the level of the North West region in the period 2017-2021,					
	Year 2017	Year 2018	Year 2019	Year 2020	Year I 2021	2021-2017
	UM: Number					
	Number	Number	Number	Number	Number	
North West Region	366.228	365.417	368.869	361.401	355.134	-11.094
Bihor	74.523	72.792	72.613	75.029	74.363	-160
Bistrita-Nasaud	73.474	73.717	77.791	73.092	73.897	423
Cluj	63.482	66.983	66.493	64.507	63.294	-188
Maramures	79.510	76.557	74.219	73.393	68.400	-11.110
Satu Mare	46.137	46.037	48.893	47.678	46.497	360
Salaj	29.102	29.331	28.860	27.702	28.683	-419

Source: Processing after the National Institute of Statistics

It can be observed according to table 3 that at the level of 2021, compared to 2017, cattle herds decreased by 11.09 thousand heads, the largest decrease occurring in Maramureș county, a decrease that is even higher compared to the decrease at the level of the region, respectively by 11.11 thousand heads. Thus, slight increases are observed at the level of Bistrita Năsăud County (+423 heads), respectively at the level of Satu Mare County (+360).
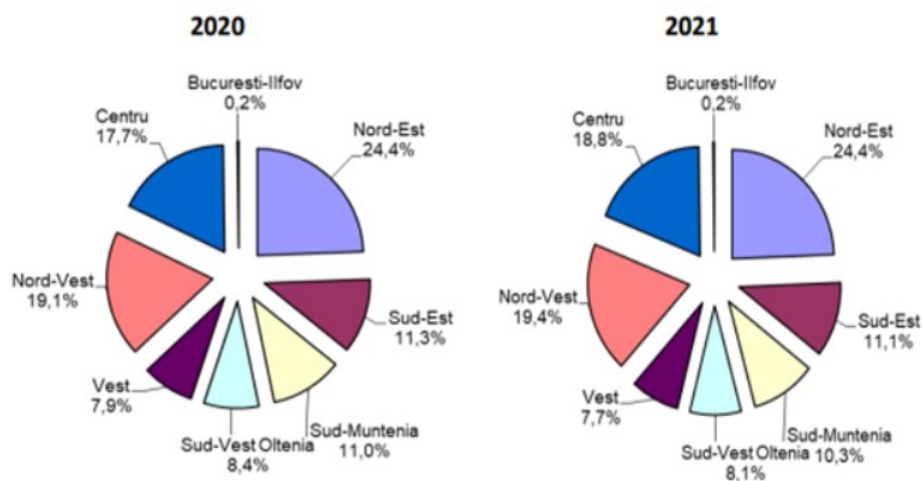

Figure 2 Distribution by regions of development of cattle herds as of 1 month 2020-2021 (timlact.ro)

According to Figure 2, it can be seen that the share of cattle from June 1, 2021 compared to June 1, 2020 increased only in the Center region by 1.1 points, respectively in the North-West region by 0.3 points. Decreases are observed in the other regions; the largest decrease being highlighted in the South Muntenia region with 0.7 points.

The North-East region is the only region that did not undergo any changes regarding cattle herds on June 1, 2021, compared to June 1, 2020.

According to a study presented on the Agroinfo website, the causes that led to the decrease in cattle herds (mainly those raised in peasant farms) were:

1. insufficient rural workforce (elderly population, depopulation of rural areas through labor migration from villages);

2. the decrease in farmers' incomes, which cannot motivate them to remain in the activity;

3. weak agricultural cooperation and the prevalence of animals with low genetic value. (Agroinfo, 2022)

Another study highlights the fact that livestock farmers claim that the number of cattle herds has decreased due to several factors, such as the low price of milk and meat, the lack of labor on farms, but also the fact that farmers are not supported and that they have no help. (Timlact, 2021).

The cattle and cattle related agricultural activities is being under stressed in the last decade. The existing support funds although they have somehow mediated the decline are still insufficient by themselves to reverse the situation, as the numbers above show.

Moreover, we need to have in mind other external factors such the changes in consumer's preferences due to a more ecological behavior induced trough them. The environmental standards that need to be applied also add a supplementary pressure. The fight against climate change both at national and European level generated pieces of legislation that create(d) the legally binding framework for each Member State to achieve the EU's intermediary (2030) and final (2050) targets

CONCLUSIONS

The cattle herds have suffered a slow yet constant decline in the last years due a series of factors, both national and European ones.

From the national perspective there is becoming clearer that financing by itself is not enough. Both at central and regional level measures should be taken in order to improve the general aspects of the rural areas and it has to be a transversal aspect.

For instance, the declining demographics cannot be tackled just by providing funds for the cattle farms but we need to invest also in infrastructure, in education and training, etc.

Also the cattle farmers should take into consideration the challenges of the green transition and the increasing environmental protection standards that generate new and new constraints on them.

REFERENCES

Agroinfo, 2022,https://www.agroinfo.ro/politic/de-ce-scad-efectivele-de-bovine-lista-motivelor-intr-un-document-madr, consultat ultima oară la 22 martie 2023;

Buliga-Ștefănescu, A. (2019). Analysis of the cattle sector in Romania. Research Journal of Agricultural Science, 51(3).

Cioran, M. C., & Maciuc, V. (2021). Studies on beef cattle for processing in Romania. Scientific Papers. Series D. Animal Science, 64(1).

Chiurciu, I. A., Soare, E., Chereji, A., Certan, I, & Voicilaș, D. M, 2022, Romania's role on the beef market in the context of geopolitical instability.Annals of the University of Oradea, Fascicle: Ecotoxicology, Animal Science and Food Science and Technology, 63-69

Directorate-General for Agriculture and Rural Development – DG AGRI, 2022. Carne de vită. Măsuri de piață în sectorul cărnii de vită / Beef. Market measures in the beef sector. Available at: https://agriculture.ec.europa.eu/farming/animal,accesedon 06 march 2023

Grodea, M. (2015). Opportunities for relaunching the romanian beef consumption in the context of the new common agricultural policy–a comparative analysis in countries with similar consumption habits. Scientific Papers. Series" Management, Economic Engineering in Agriculture and Rural Development", 15(1), 187.

Harta Regiunea Nord Vest, România, disponibilă online lahttps://cepu.ro/contracte-de-finantare-prin-regio-2014-2020-din-regiunea-nord-vest/, consultat ultima oară pe 20 martie 2023 .

Institutul Național de Statistica, 2023, Efectivele de animale, pe categorii de animale, forme de proprietate, macroregiuni, regiuni de dezvoltare si judete, la sfarsitul anului, disponibil online la TEMPO Online (insse.ro), consultat la 15 martie 2023

Hocquette, J. F., Ellies-Oury, M. P., Lherm, M., Pineau, C., Deblitz, C., & Farmer, L. (2018). Current situation and future prospects for beef production in Europe—A review. Asian-Australasian journal of animal sciences, 31(7), 1017.

MADR, 2023, Creșterea animalelor -bovine, disponibil onlnine la https://www.madr.ro/cresterea-animalelor/bovine.html, consultat ultima oară la 14 martie 2023.

Maerescu, C. M., Țuțui, D., & Chereji, A. I. (2018). Evolutions and perspectives concerning the production and consumption of sheep meat in Romania. From a declining industry to a rising star. Analele Universității din Oradea, Fascicula: Ecotoxicologie, Zootehnie și Tehnologii de Industrie Alimentară, 17(A), 87-94.

Planul de dezvoltare al regiunii Nord-Vest 2021-2027, disponibil online la https://www.nord-vest.ro/wp-content/uploads/2020/10/PDR-Nord-Vest-2021-2027-1.pdf, accesat ultima dată pe 1 aprilie 2023

Prezentare Regiunea Centru, 2022, disponibilă online lahttps://www.adrcentru.ro/prezentare-regiunea-centru/, consultat ultima oară la 19 martie 2023.

Socol C.T. & Maerescu, C (2020). Aspects of dairy cattle breeding and improvement in Romania. Analele Universitatii din Oradea, Fascicula: Ecotoxicologie, Zootehnie si Tehnologii de Industrie Alimentara, 19(A), 135-142.an organic farm. S. Afr. J. Anim. Sci. 45, 30-38.

Soare, E. (2015). Beef market in Romania. Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, 15(1), 493-500.

Spatiul-rural-din-nord-vestul-tarii-intre-o-agricultura-medie-si-mari-provocari-de-dezvoltare-turistica, 2019, disponibil online la https://www.agro-business.ro/, consultat ultima oară la 29 martie 2023.

Timlact, 2021, https://timlact.ro/evolutia-efectivelor-de-bovine-in-romania/consultat ultima oară la 28 martie 2023

Vaș, E., Sebe, M. (2023). Romania's Fight Against Climate Change. Contributing to Ambitious European Targets While Facing Deep-Rooted Sectoral Flaws. In: Kaeding, M., Pollak, J., Schmidt, P. (eds) Climate Change and the Future of Europe. The Future of Europe. Springer, Cham. https://doi.org/10.1007/978-3-031-23328-9_22