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Livestock Production In Poland During The Episodes Of Economic Crises: A Retrospective And Current View*

Kamila MUSIAŁ

National Research Institute of Animal Production, Department of Production Systems and Environment, ul. Sarego 2, 31-047 Kraków, Poland

Correspondence should be addressed to: Kamila MUSIAŁ, kamila.musial@iz.edu.pl

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Abstract

The aim of this study was to present the selected crises phenomena occurring in Polish agriculture, including livestock production in the 20th. century, and the first two decades of the 21st. century. During the 20th. century the first significant degradation of agriculture was caused by the World War I, which resulted in the lost of 37,5% cattle, 48% horses, 52% pigs and 60% of sheep, compared to pre-war situation. The next and particularly acute agrarian and food crisis in the 1930s, was a direct result of the Great Depression, and again led to profound impoverishment of rural areas. In the begining of 21st. century, in the period of 2006-2007 there were obesreved favorable conditions for agricultural development in Poland, which have been connected with accession to the European Union. However, shortly after, there was another big destabilization of global and, consequently European agricultural markets. That included downturn in demand and prices, particularly for grain, milk, and livestock, and the economy collapsed again. Currently, in the third decade of the 21st. century there is again visible some kind of recession in animal production. This time it results both from changes in the lifestyle and the new EU requirements, which can be difficult to meet, especially by the owners of small farms.

Keywords: animal production, food crises, agriculture in Poland, 20th. and 21st. centuries

Introduction

Crisis phenomena in the form of recessions or economic collapses that have various origins and nature, have accompanied the transformation of many states for centuries, directly or indirectly affecting various types of economic entities. At the same time, they have played a leading or significant role in shaping the social and economic structures of a given state (Wawrzyniak, 1984). A crisis itself can be viewed from various perspectives or scales. An economic crisis is a commonly referred to as condtition of an economic collapse. At the same time, in economics it is understood as a major phase of the business cycle, characterized by a decline in basic indicators of overall economic activity, primarily resulting from overproduction (Ashton, 1984). However, according to Dach and Szopa (2004), this is not overproduction in terms of actual societal needs, but merely a relative excess of supply over effective demand.

Economic crises, recorded throughout the history of national development, have recurred throughout the world. Initially, they were most often associated with wars and conquests, but also with various epidemics resulting from the spread of infectious diseases. The latter were often result of wars, in which dead soldiers, civilians, but also animals contributed to biological contamination of groundwater, facilitating the further spread of various diseases. However, the main so called instigators of crises were such factors as: the development of capitalism, the free market, and industry. Great Britain, the most economically developed country during the 18th. and 19th. centuries,

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in the very same periods experienced crises, in 1788 and 1819. Nevertheless, soon after that economic downtourns, there were observed some new development phases in that country (Skodlarski, 1995; Płonka, 2021).

Subsequently, already in the 20th. century, during 1929 collapse of the US stock market, there was triggered a crisis, that quickly spread to other economically developed countries, reaching Europe as early as in 1930. The impact of these crises on societies varied in countries with varying degrees of economic development and internal structures. In highly industrialized countries, that phenomenon was characterized by a decline in production, a sharp increase in unemployment, a decline in income of the urban and rural population, and consequently a shrinking demand for food. However, the course of crisis was particularly severe in the case of agricultural countries, as Poland, where the drop in agricultural commodity prices was particularly acute, and led to the profound impoverishment of rural areas. As a result, living conditions deteriorated significantly (Grabski, 1929; Cieplewski et al., 1971). The aim of this study was to present the selected crises phenomena, occurring in Polish agriculture, including livestock production, in the 20th. century and the first decades of the 21st. century.

Materials and methods

The study presents a historical overview of development and decline, and therefore the crises, in livestock production in Poland, during various periods of the 20th. century and the first decades of the 21st. century, based on analyses and comparisons of statistical yearbooks. They consist of:

– Statistical Yearbook of the Kingdom of Poland (1915);
– Statistical Yearbook of the Kingdom of Poland (1925);
– Concise Statistical Yearbook (1939);
– Statistical Yearbook (1947). Central Statistical Office of the Republic of Poland, Year XI;
– Statistical Yearbook (1971, 1981, 1994). Central Statistical Office of the Republic of Poland;
– General Agricultural Census (2020). Central Statistical Office.

In order to present the more current situation, there have been used data from the Central Statistical Office for the years: 2005, 2016, and 2024, which have showed the period following accession to the European Union.

Agrarian and food crises in the 20th. century

In the years preceding the World War I, statistical information about the Kingdom of Poland was presented in a comprehensive and detailed manner in the Statistical Yearbook (1915). Analysis of such data on the state of livestock population clearly indicates a small number of livestock in that period of time. In 1911, the cattle population in the Kingdom of Poland amounted to just 2 267,000 heads (Table 1). This numbers, converted to the 1000 inhabitants and 1 square verst, amounted to 17,6/100 ha. The total sheep population was relatively high at that time, reaching 945,300, i.e., 81 sheep per 1000 inhabitants. Also, horses played a very important role in the livestock population and its structure. Their population in the Kingdom of Poland was 1 226,200, or 105 for every 1,000 inhabitants. The pig population was low, especially by contemporary standards, with 597,800 pigs in the Kingdom of Poland, and more than 3.8 times smaller than cattle.

Table 1. Characteristics of numbers of the farm animals in 1911 and 1925, in the Kingdom of Poland

Livestock population	Cattle	Horses	Sheep	Pigs	Goats
1911					
Thous. heads	2 267, 1	1 226, 2	945, 3	597,9	8,2
Per 100 inhabitants	195	105	81	51	0,7
Per 1 square verst*	20	11	8	4,4	0
1921					
Thous. heads	7 897,4	3 280,6	2 179,2	5 174,0	384,4
Per 100 ha of utilized AL	32,0	13,2	-	20,9	-
1938					
Thous. heads	10 554,0	3 916,0	3 411	7 525,0	420
Per 100 ha of utilized AL	41,2	15,3	-	29,4	-

Source: Own study, based on: Statistical Yearbook of the Kingdom of Poland (1915), Statistical Yearbook of the Republic of Poland (1925), Small Statistical Yearbook (1939), and Musiał (2021).

** Square verst was 1.133 km².*

Degradation of agriculture caused by the World War I, resulted in the repeated destruction of crops and the potential of agricultural lands, which were excluded from cultivation. In the Kingdom of Poland of that time, both Austria and Germany engaged in so called predatory economy. German authorities prevented the production of processed food products and prohibited free trade in food. Within the area of the newly established Polish State in 1918, covering 388,000 km², agriculture lost 3,6 million cattle (37,5%), 1,7 million horses (48%), 3 million pigs (52%), and 2,7 million sheep (60%) (Adamowski and Lewandowski, 1970). The area of land used for the production of basic agricultural crops decreased by 1,5 million hectares, and yields fell by approximately 30%. This resulted in a massive economic collapse and a crisis of shortages in various sectors of the economy after the end of the war, including a large-scale food crisis. The majority of the population, constituting as much as 75%, lived in rural areas, while approximately 60,2% of the economically active population was employed in overcrowded agriculture, which nevertheless provided some guarantee of survival. Such problem was accelerated by the existing agrarian structure, as approximately 60% of farms failed to provide a living for a peasant family, and the average farm size was only 3,4 hectares (Grabski, 2004).

Although economic consolidation and the reconstruction of agriculture from wartime destruction and confiscation of livestock proceeded relatively smoothly, the mid-interwar period saw a profound halt to this process. This economic downturn after the World War 1, was a direct result of the Great Depression, which in Poland peaked between 1930 and 1934, and was felt most acutely by the rural population (Musiał et al., 2025). This was due to a sharp decline in agricultural prices during this period, caused by both a drop in domestic demand and the collapse of exports. In 1935 prices of agricultural products compared to 1928, only amounted to 33%. This also means, that they were more than twice as low as the prices of wholesale inputs (66%). Then, the livestock population in 1938, so after the recovery from crisis, increased in comparison to 1921, for pigs from 5 174,0 to 7 525,0 thousands of heads, and analogically that numbers for cattle were: 7 897,4 - 10 554,0 (Table 1). Notwithstanding, for small farms, in order to save their income, that meant increasing the commercial production, mainly at the expense of limiting food consumption in the households (Musiał, 2021). That is why the owners of small-scale farms, felt this situation particularly acutely. This phenomenon was exacerbated by the high level of debt in such agricultural entities. Many agricultural countries faced the problem of limiting consumption, even below the actual needs of farming families, and artificially increasing commodity surpluses. Many farms then went bankrupt, sold off part of their assets, and therefore especially land, or were taken over by creditors (Strzelecki, 1974).

At that time, the agricultural crises was observed also in some other Central European countries, including Hungary and Romania, where it lasted uninterrupted until 1935. A key characteristic of the agricultural crisis was the progressive decline in prices for agricultural products. However, global agricultural production remained at a level similar to the pre-crisis period. The rapid and profound price drop was a dominant phenomenon and a regular feature of the crisis period, affecting both the prices of industrial goods and raw materials, as well as agricultural products. This situation, as well as the new, unfavorable relationships between prices, and agricultural products, which economically discredited agriculture, resulted primarily from the low elasticity of agricultural production relative to demand and the declining demand for agricultural raw materials. The result was a significant reduction in consumption and a decline in agri-food processing (Skodlarski, 1995). Independent national governments undertook a variety of actions to manage the economy and markets. These efforts were aimed in particular at eliminating, mitigating, or preventing the development of overproduction in agriculture. According to Musiał et al. (2025), the instruments used to manage the crisis were diverse, often innovative, but also some of their elements can now be considered controversial. The crisis in economic policy and practice was further deepened by the emergence of various new theories for combating the recession, which, according to Sokołowska (2009), gave rise to the so-called crisis theory.

The Great Depression had its contribution to the creation of a popular instrument, called a production quotas, which is still in use in the US and EU. The Roosevelt's regulation in 1933 introduced a principle of limiting the area of crops, such as wheat and cotton, through voluntary agreements with producers, allocating adequate compensation funds to farmers for this purpose. Farmers' participation in this form of production restriction was initially voluntary, but in some countries compulsory restrictions were also used (Moszczeński, 1930). To prevent overproduction of livestock concentrated feed, the supply was regulated at the administrative level, which was intended to promote price stabilization and limit the already excessive prices. Moreover, recognizing that a drop in agricultural product prices below a certain minimum would result in mass farm bankruptcy, there have been introduced the minimum prices for agricultural products. Similar practices were used with milk prices in Switzerland, where the necessary funds were collected from special taxes paid by farmers, who were often the members of cooperatives, customs duties on imported feed, and government subsidies. The intervention methods depended on the internal structure of a given country's agriculture and agribusiness, but also on previously used management instruments, practiced under conditions of economic stabilization. Statutory restrictions were also

introduced on the number of cows bred, with the herd size determined on farms based on their own feed base, i.e., the volume of fodder crop production (Moszczeński, 1930).

For farms experiencing economic difficulties, a key instrument in combating the effects of crisis, especially in its final phase, was the use of preferential, which means cheaper, loans and later also some special mechanisms for debt relief for farms, that had lost financial liquidity and gone bankrupt before or during the crisis. This phenomenon severely affected rural part of Poland. The decline in agricultural profitability made servicing the increasingly expensive loans and credits taken out during the years of prosperity exceptionally difficult. Agricultural debt, disproportionate to its payment capacity, became a widespread phenomenon worldwide (Mieszczankowski, 1983). Cheaper credit offered to farmers, for example, in the autumn, i.e., after harvests, prevented rapid and therefore cheaper mass sales of agricultural products. An example of this type of protection is the use of a special registered credit for grain in Poland. Besides programs designed to counteract oversupply, instruments were also used to deepen the internal market by increasing the purchasing power of domestic consumers. For example, increased milk consumption was promoted in Norway, which served to increase demand for this surplus production. Although, in Polish economy there were observed from 1934 some clear signs of recovery, the crisis in agriculture lasted the longest (Tomczak, 2006). It resulted in deep and growing debt among farms, primarily those that had previously benefited from loans for farmsteads and land under the agrarian reform. Although Poland's food security improved significantly in the interwar period, due to the significant population growth, malnutrition remained a common phenomenon. According to Zegar (2018), it was true that growth in livestock production outpaced population growth, but meat consumption per capita was significantly lower than in Western Europe, reaching 18,3 kg during the crisis, in 1933 and 22,4 kg in 1938.

Another deep food crisis appeared with outbreak of the World War II, which began on the 1st. of September 1939. For the Polish agriculture that meant it was just after the grain harvest, but before the potato and sugar beet harvest. Furthermore, German occupation troops, moving frontally across Poland, destroyed farmlands and confiscated crops and livestock, thus seeking to increase their army's self-sufficiency in food (Arnold, 1970; Grabski, 2004). The post-war food crisis was profound and affected all products, including basic necessities such as flour, groats, bread, and fat. The post-war state's actions led to the elimination of fallow lands created by warfare and resettlement operations. In 1945, the sown area was approximately 7-7,5 million hectares, while by 1948, it had already reached 14,4 million hectares (Bajan, 1984). As a result of the treaty agreements between victorious powers, Poland lost its agricultural lands in the east to the Soviet Union, and received significantly smaller, yet economically valuable areas in the west. Intensive repatriation and settlement efforts were carried out in these areas, accommodating former German individual farms and estates, where state-owned agricultural farms and later production cooperatives were established (Góra, 1973).

Referring to the crisis phenomena of first half of the 20th. century, it seems important to note that next economic crisis in Poland occurred in 1949, during the so-called trade war, which involved the nationalization of first small-scale trade, and then larger and smaller production. In agriculture there was a growing confusion, and a clear political push for collectivization was posing a threat to individual farms. It was because, this time the crisis manifested itself in a conflict of the State with farmers, who owned larger agricultural entities. However, in fact it was enough to own just about 5-6 hectares to receive the title of so called „landowner". During that time, in 1951 there were also introduced the compulsory deliveries in agriculture, which were an important source of financing for the state. The prices paid for these products were at first 50%, and over time 30% of the market price, and from 1953 onward the amount of compulsory deliveries was increased annually (Musiał et al., 2025). They lasted on a limited scale until the 1970s, and consisted of deliveries of grain, live pigs and beef, and also milk. Yet, that actions in the rural areas and in agriculture, undermined already low trust in the state during that time (Kłusek, 2010).

Table 2. Population of the livestock in Poland in selected decades of the 20th. century

Livestock population- in thous. of heads	Cattle	Horses	Sheep	Pigs	Goats
1946	3 910,5	1 729,5	727,1	2 674,1	547,0
1956	8 353,2	2 546,7	4 223,0	11 560,6	lack of data
1966	10 390,8	2 589,7	3 164,2	14 251,1	lack of data
1970	10 843,5	2 585,2	3 199,2	13 446,1	lack of data
1980	12 648,6	1 779,9	4 206,5	21 325,6	lack of data
1985	11 055,0	lack of data	4 837,0	17 614,0	lack of data
1990	10 049,0	lack of data	4 159,0	19 464,0	lack of data

1994	7 976	lack of data	870,0	19 466	lack of data

Source: Own study, based on: Statistical Yearbook (1947), 'Central Statistical Office of the Republic of Poland, Year XI', Statistical Yearbook (1971, 1981, 1994), Central Statistical Office of the Republic of Poland.

Notwithstanding, on a long scale in the post-war period in Poland, cattle breeding increased significantly from 3 910,5 thousand heads in 1946, to a record 12 648,6 in 1980. However, then a slow decline began and immediately after the economic transformation in 1990, this number decreased by over 2 million. As far as sheep are concerned, immediately after the World War II, population of that animals was 727,1 thousands of heads, but by the 1950s it reached over 4 millions. Statistics from the 1980s and early 1990s also showed similar numbers. But, after that period, the sheep population plummeted to about 870,0 thousands of heads (Table 2). The opposite situation was observed for pigs, which population in the 1940s amounted to over 2.5 million heads, reaching its highest level in 1980 - over 21 million heads. Moreover, the decline in the number of that animals in the 1990s was not as drastic as in the case of sheep, and the pig production was maintained at a level of over 19 million per year. What is more, during the 20th. century interesting processes took place for horses, as their use gradually changed from typically working to being used for recreational and sports purposes in the modern society. The horses population in 1947 amounted to 1 729,5 thousands of heads, then it has risen to above 2, 5 millions, and in 1980 it dropped again to 1 779,9 thousands of heads. As far as goats are concerned, they have never been a crucial part of the Polish animal production, and in 1940s they population reached just over 500 thousands of heads. Yet, then it also dropped considerably (for the next decades there were no data available in the Statistics of Poland).

Recession in agriculture in the 21st. century

In Poland the years 2006-2007 were a period of favorable conditions for agricultural development, which was directly related to recovery triggered by its accession to the European Union. However, later due to the destabilization of global and, consequently European agricultural markets, including the downturn in demand and prices, particularly for grain, milk, and livestock, the economy collapsed again (Józwiak and Zieliński, 2010). That was reflected in a decline in monetary income, and consequently, the overall agricultural economic indicator. Polish government, including the Ministry of Agriculture, responded to emerging symptoms of economic crisis and the dire forecasts in 2008. There was predicted a decline in grain consumption, which could have resulted in a farmers' response, which was familiar to the one known from the period of 1930s - increasing livestock production and creating a market for high surpluses of these products, but consequently lower prices. The various effects of the crisis in agriculture were already known, resulting for example from the collapse in world prices for dairy products. Deep economic downturn, also led to changes in the assessment of agriculture as a business sector. It also undermined the optimism of investors and farmers, who had previously expanded production (Musiał et al., 2025).

Moreover, according to that authors, to counteract negative effects of the crisis on agricultural sector, the Ministry of Agriculture, either independently or in consultation with the EU's bodies, prepared a series of new protective and activating measures. First, the Ministry intended to accelerate the absorption of EU aid funds provided for in the Rural Development Programme. That included launching of all support measures for agriculture and rural development in the first quarter of 2009. The Ministry also intended to encourage farmers to use the EU support for their farms, by securing pre-financing for their investment activities and securing advance financing for investments. Furthermore, as part of these measures, Poland was to receive additional market support, amounting to several dozen million euros. The evolving crisis situation led to the development of new and specific anti-crises instruments. Also, this crisis unfolded differently for the large and small farms. The latter, faced with the continued threat of deteriorating cost-price relations, extensified production, eventually many of them abandoning agricultural production. However, such actions were only available to those farm owners, who also had non-agricultural, extra sources of income. Otherwise, the need to maintain production for the farmer's family's self-sufficiency, indicated the increase in sale, to support necessary purchase of inputs and consumer goods, similarly as it was already in the case of the Great Depression. The EU aid funds, including direct subsidies, probably remained an important source of relatively small but reliable income during the economic downturn, which in small-scale farms was allocated more to social, rather than production purposes (Musiał et al., 2025).

The trends in Polish animal production during the last two decades indicate its increasing concentration and specialization (Żmija and Czekaj, 2017). Table 3 presents data characterizing changes in the population of main animal farm's species in Poland: cattle, pigs, and sheep, between 2004 and 2023. Analysis of such evidence indicates that during this period of time the total cattle population nationwide increased by 20,5%. Such general growth was observed, even though the simultaneous decline in the number of dairy cows. This is the result of increasing number of young cattle for fattening within the herd structure, indicating the rise of profitability in this form of farming (Sowula-Skrzyńska et al., 2017). Moreover, during that period of time the pig population in

Poland decreased in all voivodeships. The largest declines were recorded in the following voivodeships: Lesser Poland (76,1%), Subcarpathian (71,4%), Lubelskie (64,6%), Podlaskie (57,9%), and Lubuskie (61,4%). Also there has been observed the shrinking population of sows - up to 59,8% during this period, which was a consequence of high piglet production costs. In some voivodeships, such as Podlaskie and the Greater Poland, the shrinkage in population of this animals can be explained by the region's shift toward cattle breeding. In other voivodeships, as the Lesser Poland and Subcarpathian, pig farming has become less important in agricultural production. Also, according to Musiał et al. (2025), the drop in number of that livestock in Poland is closely linked to the low profitability, especially at small scale farms, and a relatively weak market. However, in some regions of Poland, particularly in such voivodeships as Greater Poland, Kuyavian-Pomeranian, and Masovian, pig farming is still quite popular due to tradition, and some farms continue this line of production.

As far as sheep is concerned, number of animals shows varying tendencies. A downward trend was observed from the early 1990s until 2015. In that case, it seems important to remind that in 1990, the sheep population in Poland was over 4 million. That numbers, if compared to data from 2023, indicate about tenfold decline. The population's reduction was caused mainly by the lack of a market for sheep products (Żmija and Czekaj, 2013). In recent years there has been visible some upward trend in sheep farming, which is currently concentrated mainly in the Lesser Poland Voivodeship, where these animals constitute 24,4% of the national population. But a relatively high sheep population was reported also from the Greater Poland and Podlaskie. At the same time, the lowest number of these animals was noted in Opolskie voivodeship. Moreover, the highest decrease in the sheep population during the period 2004-2023 occurred in the following voivodeships: Kuyavian-Pomeranian by 63,4%, and Greater Poland, by 36,0% (Central Statistical Office, 2005, 2016, 2024).

The problems of animal production in Poland, resulting from some forms of crises are also observed nowadays. As an example may serve the territorial distribution of livestock across the country. This applies especially to cattle, which is a dominant ruminant species in Poland, but also to sheep. In fact, a shortage of ruminants can be observed, especially in the mountain regions, which are the most predisposed to animal production. In Polish conditions they are southernmost areas, like the Sudetes and the Carpathians. In fact the consequences of such abandoning of animal production have become subject of academic debate, the significance of which is both cognitive and practical (Musiał and Musiał, 2019). The current decline in animal production, also known as deanimalisation, that involves a reduction in number of animals kept on farms, results from structural changes in agriculture and the workforce. Another important factor is change in the lifestyle of society, including those groups that previously engaged in work in agriculture. This have made people less willing to do work, that is so labor-intensive and time-consuming. Poland's accession to the EU also resulted in appearance of new requirements, which have been particularly important for small farms. They necessitate separation of different animal species within livestock buildings, increase the requirements of animal welfare, and animal registration. The pursuit of the rise in animal productivity is also evident, putting local animal breeds at risk, due to their lower profitability. According to Polak et al. (2021), after examining 30 breeds of cattle, horses, pigs, sheep and goats, one was assessed as being critically endangered, 24 were determined to be endangered and in need of conservation, 5 other were less endangered, but in need of constant monitoring. However, they are particularly precious, having the unique characteristics and adaptability to diverse and often adverse environmental conditions. That is why local breeds in Poland are under conservation programmes, and the National Research Institute of Animal Production is important institution involved in such tasks.

Table 3. Changes in the population of selected farm animals in Poland during 2004-2023, in particular voivodeships

Livestock population	Cattle	Sheep	Pigs
2004			
Thousands of heads in total	**5 353,4**	**311 834**	**17 395 568**
The voivodeship with the lowest population	65,1 **Lubuskie**	3 008 **Lubuskie**	260 865 **Lubuskie**
The voivodeship with the highest population	949,8 **Masovian**	81 074 **Lesser-Poland**	2 104 458 **Kuyavian-Pomeranian**
2015			
Thousands of heads in total	**5 960,7**	**221 187**	**10 590 202**
The voivodeship with the lowest population	73,8	2 195	144 744

	Lubuskie	Opolskie	Lubuskie
The voivodeship with the highest population	1135,2 **Masovian**	62 949 **Lesser-Poland**	1 159 672 **Kuyavian-Pomeranian**
2023			
Thousands of heads in total	**6 359,7**	**270 492**	**9 769 697**
The voivodeship with the lowest population	94,6 **Lubuskie**	3 079 **Opolskie**	96 842 **Subcarpathian**
The voivodeship with the highest population	1187,8 **Masovian**	66 064 **Lesser-Poland**	1 328 930 **Masovian**

Source: Own study, based on: Central Statistical Office. (2005, 2016, 2024), and (Musiał et al., 2025).

Summary

Analyzing the course of economic crises that occurred in the 20th. century, it is clear that such phenomena are cyclical in nature. This refers to the collapse of agriculture in general and in livestock production, which resulted in the emergence of food crises. After the World War I agriculture, and therefore the food supply for the population, was severely devastated. Food poverty, malnutrition, and even seasonal famine were common, especially in the spring season. This also affected rural areas and farming families, where, in the case of small farms with numerous household members, the food scarcity was a mass phenomenon. In the first two decades of the 21st. century, a decline in horse population in Poland was closely related to the industrial processes taking place in Polish agriculture. Moreover, the drop in the number of dairy cows was mainly due to the low profitability of production on a small scale, combined with agrarian fragmentation, which resulted in high production costs and low prices per unit of product. As far as sheep is concerned, the decrease in number of that animals resulted from the drop in profitability of their production, that began in the 1990s., after the economic transformation. Currently, in the third decade of the 21st. century some new crisis in animal production have appeared, that results from both changes in the lifestyle of society and new requirements from the EU, which can be difficult to meet, especially by owners of small farms.

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