

THE STRUCTURAL ANALYSIS OF PORK PRODUCTION IN THE ENTITIES OF REPUBLIC OF MOLDOVA IN TERMS OF FOOD SECURITY

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Abstract

In the Republic of Moldova, pork is the most important type of meat, accounting for about half of the total meat production, pig breeding being the sector with the largest share in animal husbandry. For consumers, consumption of pork is a tradition and accounts for about 50% of the annual meat consumption. After 1989, the total number of pigs, as they diminished permanently. Only in recent years has it started to feel a slight increase. During the period 2011-2016 the number decreased by 25.3 thousand heads. This indicator on the number of pigs registered in agricultural holdings weighing on livestock is slightly increasing by about 46 thousand heads. This trend is due to foreign investment in meat processing units across the country. The elaboration of this study used the monographic method, the grouping method, the situation analysis and forecasting method. As a result of the papers, it was determined that most of the cattle population is registered in territorial units, most of them being in the districts around Chisinau.

Key words: branch of livestock, livestock, animal species, dynamic, trend, improvement.

Introduction

The stock of livestock in the structure by households is basically reversed. If at the beginning of the 1990s about 75% of the cow flock was in the state or corporate administration, then by the end of 2015 93% of the population is in the households. Per branch, the distribution of livestock by categories of households shows a significant concentration of about 89%, in households. It is known that the zootechnical branch cannot have an efficient development under primary conditions of maintenance management and its staff and structure is one of the basic elements that would ensure it. The reduction in livestock has caused more problems in: providing domestic livestock production to the population and processing enterprises, partial and even complete destruction by categories of animals of the genetic pool, reducing the number of jobs but also other (Șumanschi, A.; Focșa, V., 2007).

In the Republic of Moldova, pork is the most important type of meat, with about half of it, pig-breeding being the sector with the highest share in. For consumers, consumption of pork is a tradition and accounts for about 50% of the annual meat consumption. After 1989, pig herds diminished permanently. Only in recent years has it started to feel a slight increase.

During the period 2011-2016 the number decreased by 25.3 thousand heads. This indicator on the number of pigs registered in agricultural holdings weighing on livestock is slightly increasing by about 46 thousand heads. This trend is due to foreign investment in meat processing units across the country. The problem of pigs in the complexity of the

development of this sector is essential. Solving this problem will in large part contribute to the development of the sector.

1. Bibliography

The factual material used in this elaboration is based on the official statistical data provided by the National Bureau of Statistics, the scientific works in the field of the native and foreign scholars. Additionally, periodical publications in the field were used, the publications of the governmental institutions responsible for the problem approached.

In this paper, we used the monographic, mathematical, statistical and economic methods to obtain the expected results.

2. Analysis of the flock of pigs

In this chapter, we will analyse the peculiarities of the number of pigs distributed among the entities in the country, the number of the flock by type of organizational-juridical units etc. The purpose of this analysis is to identify the problems in reducing the total number of heads per country and the increasing trends in specialized pig production units. In this study, all institutions with a legal personality who have swine suckers and households with a minimum number of 50 pig heads were considered.

2.1. Distribution of pigs by general criteria

This sub-stage presents the results obtained from the analysis of the sheep flock to the agricultural entities in the country according to the organizational-legal nature of the entities and the territorial-administrative units. The systematization of the flock of pigs according to the organizational-legal type of the entities is presented in Table 1.

Table 1. Characteristics of the flock of pigs according to the organizational-legal form of the enterprises in the field

Types of entities	Total effective, heads	SShare, %	Number of entities	Actual average, heads	Maximum effective, heads	Minimum effective, heads
A	1	2	3	4	5	6
Agricultural Cooperative	2530	1,47	12	211	707	16
Kolkhoz	257	0,15	1	257	-	-
Peasant Farm	3200	1,85	39	82	380	16
Sole Proprietorship	3717	2,15	36	103	550	6
State Owned Enterprise	3178	1,84	2	1589	3119	59
Natural Person	360	0,21	3	120	180	60
Joint Stock Company	537	0,31	6	90	116	53
Limited Liability Company (Ltd)	158699	91,91	87	1824	49156	17
Experimental Entity	185	0,11	1	185	-	-
Total	172663	100,0	187	×	×	×

Source: Developed by the authors based on the information gathered on the ground with the support of the scientific project "Strategies for modernization of the zootechnical sector in the context of food security and regional economic integration".

From the data obtained in the above table, we find that the number of swine registered in specialized units is about 172 thousand heads, at country level, in fact this indicator is much bigger – approx. 453 thousand, so only 37% are in agricultural enterprises and households specialized in their growth. On the other side, 63%, is in households up to 50 head per household.

91% of the flock is registered in Ltd. Such a significant proportion indicates that most of the swine-breeding entities are of this type. The average number of the herd in an entity is 1824 heads, the maximum number is 49156, and the minimum is 17. The number of these entities is 87. The Ltd is the most universal organizational-legal form in the breeding farms. It also offers opportunities to attract foreign capital in the development of the respective sub-sector. Compared to Ltd, the other types of entities have an insignificant share in the total number of pigs managed for growth and fattening. Here we can only mention that the Peasant Farm and Sole Proprietorship have a share of approx. 2% as in total and 39 and 36 units respectively in this subheading.

Distribution of livestock is a scientific interest not only in the organizational-legal form but also in the territorial aspect. Most agricultural enterprises, especially those specializing in animal husbandry, were set up based on former state entities (kolkhoz, state owned farm, farm etc.). At the same time, the animal product market has diversified and is constantly changing in recent years, new businesses have emerged according to the sales market, production capacity and consumer requirements.

At the next stage, we analyse the distribution of the flock of pigs in the regional aspect. Table 2 shows the structure of the population by territorial-administrative districts.

**Table 2. Distribution of the territory of territorial pigs
by territorial-administrative units**

Territorial-administrative unit	Total effective, heads	Share, %
A	1	2
Anenii Noi	59656	34,55
Bălți	507	0,29
Basarabasca	240	0,14
Briceni	1727	1,00
Cahul	8005	4,64
Cantemir	832	0,48
Căușeni	3309	1,92
Chișinău	49	0,03
Cimișlia	505	0,29
Criuleni	28924	16,75
Dondușeni	720	0,42
Drochia	459	0,27
Dubăsari	1008	0,58
Fălești	1444	0,84
Florești	10850	6,28
Glodeni	893	0,52
Hâncești	3682	2,13
Ialoveni	4503	2,61
Leova	4235	2,45
Nisporeni	316	0,18
Ocnita	120	0,07

Territorial-administrative unit	Total effective, heads	Share, %
A	1	2
Orhei	3708	2,15
Râșcani	4970	2,88
Rezina	691	0,40
Sângerei	1109	0,64
Șoldănești	493	0,29
Soroca	1634	0,95
Ștefan Vodă	1793	1,04
Strășeni	2701	1,56
Taraclia	1680	0,97
Telenești	225	0,13
Ungheni	6038	3,50
UTA Găgăuzia	15637	9,06
Total	172663	100,00

Source: Developed by the authors based on the information gathered on the ground with the support of the scientific project "Strategies for modernizing the zootechnical sector in the context of food security and regional economic integration".

2.2. Arranging entities by quantitative indices

As mentioned above, meat breeders are increasingly interested in increasing the competitiveness of production, including through the sale price. The livestock act plays a decisive role in solving this problem, firstly by the fact that with the increase in livestock, the entity changes its structure of costs in the ratio of fixed costs / variable costs, there are changes in the technological process of growth etc.

In Table 3, we present the ten, largest, type Ltd systematized by total staff.

Table 3. Top ten largest LLCs by actual

Entity	Total effective, heads
A	1
Pucoven	49 156
Porco Bello	28 350
Agroseminvest	21 393
Funny Pig	20 570
Confort	5 250
Elevator KELLY GRAINS	3 169
Vegecom	3 000
Gordanu Grup	2 925
Farm Meat	2 730
Valul Traian	2 200
Total	138 743

Source: Developed by the authors based on the information gathered on the ground with the support of the scientific project "Strategies for modernizing the zootechnical sector in the context of food security and regional economic integration".

The largest specialized in the country producing swine meat in the country is Pucoven with a staff of about 49 thousand heads. In fact, this entity is also the largest in the country on the sub-breeding of the swine. The first 10 Ltd hold 138743 pig heads from 15,899 heads registered in these types of enterprises, or 87.42% relative size. Therefore, in the first ten Ltd, about 87% of the total number of pigs on such entities is concentrated.

We notice that the subspecies of the swine meat-breeding trend tends to be modernized by concentrating the staff into large entities. This offers a number of opportunities:

- 1) Reduction of operational costs;
- 2) Integration of production quality system;
- 3) Attracting investments and state subsidies for the modernization of technology and equipment;
- 4) Contracting large-scale meat production to domestic and international operators;
- 5) Increasing the possibilities for marketing the production to the EU's Single Internal Market;
- 6) The exploitation of pigs for meat takes place based on specialized breeds.

Some of these entities founded with the participation of foreign capital. Analysing these businesses more deeply, we identify some distinct features. Several enterprises in this group are constituted as pork / meat processing units / departments of meat processing companies (sausages), others as specialized units of grain storage and processing enterprises, thirdly, founding entities by privatizing assets on the basis of state pig breeding complexes. Although the training paths were different, these companies are the most modern in terms of the technology of growth and the equipment with which the maintenance spaces are equipped. The meat production system is of an intensive type, some of which are closed-loop production farms¹.

As shown in the data in Table 1, we see that this type of entity is spread to pig breeding, both by number and by number of entities.

Some of these businesses are actually large, over 500 heads, indicating the formation of a large farm in the field.

In Table 4, we present the top ten largest individual enterprises by actual size.

¹ Closed circuit in swine production – raising and fattening of pigs.

As a proportion of the total number of pigs in the total number two, after Ltd, belongs to the Sole Proprietorship (Table 1). A sole proprietorship as an organizational-legal type is an entity with the status of a natural person and can carry out any type of activity based on the interests of the founder, the individual. The advantage of this type of business is the simple registration procedure. It is recorded on demand by a single individual and can carry out activities in various branches, including agriculture. Thus, for many pig breeders individual enterprise has become the most demanded type of all. As a rule, in this sub-branch, the individual enterprise is a family-type enterprise, and the employees are members of the founder's family.

Table 4. Top ten largest individual enterprises

Entity	Total effective, heads
A	1
Bivol Vladimir	550
Vicogrozodeh	493
Scorpion	293
Covalenco T	248
Burlescu S	244
Sărătilă Victor	234
Guțanu Vasile	150
Gornov N.	140
Prisacari	115
Vasilică Victor	89
Total	2556

Source: Developed by the authors based on the information gathered on the ground with the support of the scientific project "Strategies for modernizing the zootechnical sector in the context of food security and regional economic integration".

The largest sole proprietorship in the country has a staff of 550 heads. Most have a staff of over 100 heads. In these entities, about 2556 heads out of 3717 of the total staff in this group are concentrated with a share of 68.76%. As we see, the concentration of pigs in these entities is high. Regarding the location of these entities, we cannot distinguish a rule, because most of them are located throughout the country, so that the production obtained is oriented to the regional markets of the country. Most of them sell live mass production to slaughterhouses or animal purchasing entities. Some of them sell their produce to the agricultural markets. We find that most of these entities have sown and boars in the herd structure, so the organization also organizes the process of assembling. This stage of the technological flow provides a cost advantage for the stage of obtaining live produce (piglets).

Although there is a tendency to modernize the technological flow and the maintenance and growth equipment to pig fattening, in most cases the technological process is extensive, the evacuation of manure, the cleaning and decontamination of the pigs' maintenance spaces are not performed at an insufficient level for enterprises of this kind, domestic competition puts pressure on two types:

- 1) On the part of large producers;
- 2) From households. There is also competition from imported meat production.

Moldova has become a net importer of pork in recent years. Domestic meat production provides 30-40% of the existing demand. In addition, entities of this type encounter difficulties in accessing state subsidies. From the above mentioned, the individual enterprise is not the most suitable form of activity for the production of pork but also, in general, of livestock farming as an economic activity. In order to become an economically developed entity, product quality and competition, the entity requires organizational and legal changes.

At the next stage of analysis, we will perform the group analysis of the pig herd.

Table 5. Grouping of enterprises according to organizational-juridical form according to the flock

Type of entities	Groups depending on the flock					
	50 ≤	51 – 200	201 – 1000	1001 – 2500	2501 – 5000	5001 ≥
A	1	2	3	4	5	6
Agricultural Cooperative	2	5	5	-	-	-
Kolkhoz	-	-	1	-	-	-
Peasant Farm	20	17	2	-	-	-
Sole Proprietorship	15	15	6	-		-
State Owned Enterprise	-	1	-	-	1	-
Natural Person	-	3	-	-	-	-
Joint Stock Company	-	6	-	-	-	-
Limited Liability Company (Ltd)	16	36	16	6	4	5
Experimental Entity	-	1	-		-	-
Total	53	84	30	6	5	5

Source: Developed by the authors based on the information gathered on the ground with the support of the scientific project "Strategies for modernizing the zootechnical sector in the context of food security and regional economic integration".

From the data presented in Table 5, most entities are recorded in the group with a 51 to 200 head population. In this group, most entities are of the Ltd type, but also of type Peasant farm and Sole Proprietorship. In fact, these two types of enterprises have the largest share, according to the table in the first group ($50 \leq$) and the second (51 to 200). For the other groups, the number of these types of entities decreases. Therefore, most Peasant Farms and Sole Proprietorships have up to 200 pig heads. In the group with a total of 201-1000 heads, most of the entities are of type Ltd, the others are Agricultural Cooperative and Sole Proprietorship. In general, most economic entities in the country actually have up to 200 pig heads only 37% of them exceed this number. Only five enterprises in the country actually have more than 5 thousand heads. In the Republic of Moldova, the breeding enterprises are of small size.

Conclusions

1. About 51% of the total number registered in the agricultural entities is concentrated in the Chisinau municipality.
2. The largest Ltd specialized in the production of swine meat is Pucoven with a staff of about 49 thousand heads.
3. The first ten Ltd are concentrated around 87% of the total number of pigs on such entities.
4. The largest Sole Proprietorship in the country has a staff of 550 heads.
5. In these entities, about 2556 heads out of 3717 of the total staff in this group are concentrated with a weight of 68.76%.
6. Sole Proprietorship not is the most suitable form of activity for pork production.
7. Most entities are recording in the group with a staff of 51 to 200 heads.
8. Most Peasant Farm and Sole Proprietorship holdings have up to 200 pig heads.
9. The majority of the economic entities in the country actually have up to 200 heads of pigs only 37% of them exceed this number.

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