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FAMILY LIVESTOCK FARMS IN BULGARIA: THEIR COOPERATION – A NEW DEVELOPMENT HORIZON

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Abstract

The family farm is one of the leading organizational forms of agricultural production in the economies of many countries. It plays a crucial role in the production and satisfaction of market needs with agricultural products. Family business in the livestock sector of Bulgaria is represented by market-oriented farms (open systems), which through the production of animal products satisfy not only the needs of the owner and his family, but are mainly intended for market implementation. The purpose of the study is to analyze the features of the family livestock farm with a market orientation, specializing in the production of sheep products based on its own empirical study of typical Bulgarian family farms. Our own empirical research of 9 typical for Bulgaria sheep family farms is conducted through a survey method in the period 2021-2023. Their main problems and difficulties in development are identified. The possibilities of cooperation in solving the problems and overcoming the difficulties of family livestock farms are revealed. The benefits of cooperation of family farms are presented, which offer a new horizon for their development.

Key words*: *family farm, family economy, livestock farming, open system, cooperation, benefits

INTRODUCTION

The family farm is one of the leading organizational forms for implementing agricultural production in the economies of developed countries.

This makes it the main structural unit for the production of agricultural products. It is where part of the working population finds professional fulfilment.

This form of agrarian business provides opportunities for personal expression and freedom in making management decisions.

The total number of functioning agricultural farms in Bulgaria, established during the 2020 census, is 132,742. Of these, 47.8% raise productive animals.

Their relative share is highest in the South Central region – 33.6%, followed by the South Western – 19.8% and the North Western - 13.8%. In the other three regions – the South Eastern and North Eastern – it is smaller – 11.3% each and the smallest - 10.2% is in the North Central region.

The census found that nearly 31 thousand family livestock farms raise an average of 20 cattle, 2 thousand - 58 sheep, and 12 thousand - 21 goats.

In Bulgaria, family farms of market type have an average size of usable land of 6,3 ha with a tendency to slowly increase, of which 2/3 is leased. Their main economic activity is the production of plant and animal products intended for market sale. The head of the family, with the help of the other family members, carries out the activity. The annual employment in the family farm is about 1.4 work units. The age of the person managing the family business is over 50, in rare cases under it. The durable material assets on average of a family farm are around 27,333 €, and the short-lived ones around 10,620 € [9, 10].

The aim of the study is to analyse the characteristics of family livestock farming with a market orientation, based on our own empirical research of family farms in Bulgaria specializing in the production of sheep products; to identify their main difficulties and reveal the possibilities of cooperation to solve their problems.

Due to the broad scope of the researched issues in this paper, the analysis is limited to market-oriented family farms with sheep breeding specialization.

To achieve the goal of this study, we assume that the family business in the livestock sector in Bulgaria is mainly represented by a market-oriented, family farm, which we consider to be an open, market-oriented system. In it, through the production of animal products, not only the needs of the farmer and his family are satisfied, but the resulting animal products are mainly intended for market realization.

MATERIALS AND METHODS

The classification of family farms utilized in this study is: part-time farms, subsistence farms (including semi-market farms), small market-oriented and large commercial farms (Davidova et al., 2009) [6]. According to general systems theory, every system is made up of functional elements, which we refer to as "subsystems." There is an interrelation between the elements of the system, due to which its integrity and development is possible (Steffen, Born., 1987) [13]. A similar understanding can be applied to the market-oriented family livestock farm. The need to present it as an open system is also determined by the peculiarities of its cost structure and the specifics of management (Bodmer et al., 1993) [5]. A family business is not only an independent, organized, hierarchical unit, but also a living system that grows or shrinks, changes and adapts (Kolhlus et al., 1978) [8].

In Bulgarian literature, the family farm is viewed as a set of three subsystems: production, economic and legal (Stankov, 1997) [12]. Based on the understandings of the aforementioned authors and on our previous studies (Atanassova, 2003, 2016, 2019a, 2019b) [1, 2, 3, 4], we accept the thesis that the market-oriented family livestock farm with sheep breeding specialization is an open system.

It has its own input through which it supplies/purchases food, medications, etc., as well as an output expressing the volume and value of the sold sheep's milk, lambs, etc. The internal environment of this system is made up of four subsystems: production, economic, legal, and social.

In study have been used the data from 9 family farms with sheep breeding specialization. (Map 1).

Map. 1. Territorial positioning in Bulgaria of the studied family farms
Source: Own research, 2021-2023.

The farmers are members of the National Sheep and Goat Breeding Association (NOKA) [11] and participated at the interview in the period 2021 - 2023, and based on their responses, the characteristics of the production, economic, legal and social subsystems of the family farm have been established.

RESULTS AND DISCUSSIONS

The production subsystem of the family livestock farm represents the totality of the available production factors: used agricultural land, buildings and facilities, agricultural machinery, number, type and breed of productive animals, varietal composition of crops, determining the structure of the produced output. This subsystem forms the framework for the implementation of production processes. The size and potential of the factors of production largely determine the results obtained. The needs of society (market demand) determine the size of this subsystem and determine the type and quantity of animal products produced (production specialization). For the system as a whole, it is important to produce such a volume and quality of animal products (forming the income, i.e. its output) that they receive a market price that recovers the input production costs and the largest possible surplus (profit). The realization of higher profit requires planning, organization and control of livestock production in order to utilize the available production factors and their functional qualities.

Photo 1. Mother sheep (production subsystem) in one the studied farms
Source: Original.

Otherwise, they represent an expense (input) for the family farm, but not a sufficient income (output). The characteristics of the production subsystem of the nine family livestock farms studied are presented in Photo 1 and Table 1.

The economic subsystem of the family livestock farm - market type, reflects the value of the realized production or the income received (forming the output of the system) and the amount of the expenses incurred (forming the input of the system).

The difference between the output and the input (income - cost) measures the amount of profit/loss. The ratio of output to input (income/cost) measures the economic efficiency of the input production costs (Table 2). The state of the production and economic subsystems is mutually conditioned.

The income received and the expenses incurred contribute or hinder the expansion of the production capacity of the family farm.

Table 1. Characteristics of the production subsystem of the studied farms

Farm №	1	2	3	4	5	6	7	8	9
Land (ha)	60	-	-	14,5	-	-	20	30	202
Pastures	-	-	-	-	-	-	-	45	160
Sheep	200	1,000	170	145	120	500	220	150	530
Milking parlor	+	+	+	+	-	+	+	+	+
Agricultural equipment	3	3	-	1	-	1	-	1	3
Milk productivity per sheep (liter)	110	110	128	135	130	133	110	110	150
Fertility of the sheep (number of lambs/year)	1.4	1.3	1.4	1.2	1.5	1.4	1.3	1.3	1.3

Source: Own research, 2021-2023.

Table 2. Characteristics of the economic subsystem of the studied farms*

Farm №	1	2	3	4	5	6	7	8	9
Price of sheep's milk (€/liter)	0.83	0.94	0.81	0.82	0.79	0.81	0.81	0.80	0.81
Income from milk of a mother sheep (€)	91	103	104	110	103	107	89	88	121
Price per 1 kg. live weight of lamb (€)	3.21	4.10	3.33	3.85	3.33	4.10	4.10	3.49	3.85
Income from lambs sold (€)	88	118	113	106	126	133	123	101	120
Total income (€)	179	221	216	215	229	241	212	188	241
Subsidy for 1 sheep (€)	37	35	38	33	39	35	37	38	34
Gross average annual income per 1 sheep (€)	216	256	254	248	268	277	250	226	277
Total production costs/1 sheep (€)	211	241	237	239	264	258	234	238	258
Effectiveness ratio (income/cost)	1.02	1.06	1.07	1.04	1.01	1.07	1.07	0.95	1.08

Source: Own research, 2021-2023.
*Note: Calculated based on the productivity of one ewe –mother.

The legal subsystem of the family livestock farm reflects its legal and organizational status. Most often, it is a registered agricultural producer - non-trader, and in rare cases it may be aSole trader(ST) or Single-member limited liability company (Single-member LLC). The organizational form chosen by the farmer legalizes the economic activity on the farm. This subsystem determines the rules for management, complying with the current laws (Table 3).

The legal one subordinates the economic and production subsystems to the requirements of the macroeconomic environment. The type of the legal subsystem determines the rights and responsibilities of the owners (limited or unlimited), who are subject to the established legal norms. The type of this subsystem determines the possibilities for financing, the trust of financial institutions in lending, as well as tax obligations and/or reliefs.

The social subsystem of the family livestock farm symbolizes the trinity of the figure of the farmer, who is simultaneously the owner of the farm, its entrepreneur-manager and worker. This is also confirmed by the empirical studies presented in Table 4.

Table 3. Characteristics of the legal subsystem of the studied farms

Farm №	1	2	3	4	5	6	7	8	9
Status	Registered agricultural producer under Ordinance No. 3 of 29.01. 1999 on the establishment and maintenance of a register of agricultural producers (Title amended - SG, issue 31 of 2015, effective 28.04.2015)								
Identification	The farmer is a natural person entered in the register with a registration number corresponding to his/her personal identification number.								
Year of registration	2005.	2010	2012.	2019.	2011	2012	2016	-	2009.
Responsibilities	The registered farmer submits annually, from 01.10 to 28.02., up-to-date information about his/her activities, based on the information submitted, the regional directorate "Agriculture" certifies his/her registration card for a period until 28.02. of the following business year.								
Rights	Registered agricultural producers have the right to apply for and receive: 1) financial support under schemes and measures from the European Agricultural Funds through the State Fund "Agriculture"; 2) funds from the state budget in the form of state aid such as: a) free advice from the National Agricultural Advisory Service; b) free information, analyses and forecasts from the Agricultural Advisory Service; c) information on prices and markets for agricultural products from the National Agricultural Advisory Service; d) to trade in the agricultural products they produce in accordance with Art. 55 of the Agricultural Advisory Service Act and Art. 10a of the Agricultural Advisory Service Act.								

Source: Own research, 2021-2023.

The complex characteristic of the figure of the farmer, combining in one the rights and obligations of otherwise three separate figures in other legal and organizational forms of the agrarian business, provides certain advantages to the management of the family business, but at the same time there are some difficulties.

In the role of the owner of the family farm, the farmer owns part or all of the available production factors (land, machinery, animals, etc.). As such, he is motivated to use his property rationally, to manage it so that it increases and develops. The income from the economic activity of the farm is entirely for him and his family. This is an important condition for achieving higher economic efficiency of the family business. With the freedom to materialize his business ideas, the owner-farmer faces and must overcome a number of difficulties and risks. The significantly smaller size of his property compared to large lease farms makes him highly vulnerable to the suppliers of raw materials and materials (food, seeds, fuels, etc.) and to the companies buying his market production (milk, lambs). His opportunities for obtaining project financing are more limited and the amounts of subsidies are smaller. One can also add the significant production risks caused by natural disasters and cataclysms, pandemic animal diseases, etc. The losses for the farmer in many of these cases are significant. The farmer in the role of entrepreneur-manager takes an active position as the helmsman of the family business. His main function is to deal with uncertainty in the dynamic and imperfect market environment, in which profit is a return on the risk inherent in farm management (Kalchev, 2013) [7].

Table 4. Characteristics of the social subsystem of the studied family farms

Farm №	1	2	3	4	5	6	7	8	9
Age of the farmer (years)	45	61	48	39	42	38	54	55	34
Education	High school								
Motives for activity development	Family traditions	Family traditions	Family traditions	Animal husbandry experience	Family traditions	Animal husbandry experience	Animal husbandry experience	Animal husbandry experience	Family traditions
Family workforce	The farmer, his brother	The farmer and his father-in-law	The farmer, helped by his daughter	The farmer and his mother	The farmer, the father and the mother	The farmer,	The farmer,	The farmer,	The farmer, his wife and his father
Hired workforce (number of workers)	2	9	-	-	-	3	1	2	3
Method of management	Equal management	Dominant management	Sole management	Sole management	Equal management	Sole management	Sole management	Sole management	Equal management

Source: Own research, 2021-2023.

The personal fate of the farmer is strongly linked to the economic goals of the family business, as he receives the result of the production activity (entrepreneurial profit), motivating him to rationally organize production and management of the farm, to seek opportunities for innovation. The risk for the entrepreneur-farmer is the greatest and to minimize it, he needs to act promptly and professionally. In the role of a worker, the farmer is daily engaged in raising animals, cultivating the land, and is assisted in the work by his family. Very often, he does not provide for his own labor a remuneration (salary), which is due to an employed worker, but pays his monthly insurance premiums based on the minimum wage in the country, because he is a registered agricultural producer.

CONCLUSIONS

From the interpretation of empirical research on family livestock farms with sheep production specialization, some important conclusions can be synthesized: A family livestock farm of market type is an open system, the internal environment of which is composed of four functionally related elements or subsystems. The model of their functional connectivity is an individual/single-family organizational form, which implies the independence of the individual in making management decisions. This model is an "engine" of economic initiative in combination with high material responsibility, accompanied by daily labour engagement of the farmer and his family in raising animals.

The achieved production and economic results of the family livestock farm with sheep breeding specialization are mainly due to the high work motivation of the entire family and the farmer's desire to continue the family traditions. In order to meet modern market requirements and achieve sustainable growth of the livestock farm, the owner needs managerial knowledge and skills, since his social destiny is directly related to that of the family business and affects the standard of living of the family members.

In order to preserve the family traditions of raising animals inherited from his parents/grandparents and to ensure a good standard of living for the family, the main task of the sheep farmer in managing the family business is to organize his production activities in such a way as to obtain animal products (milk and lambs) for which there is a profitable market demand. The production of sheep products is a specific process that requires organization in such a way as to ensure the usability of the created production capacity of land, animals, buildings and facilities, etc. It must cover the input production costs and guarantee the farm a profit.

Current good practice among the investigated family sheep farms is their voluntary membership in the National Sheep Breeders' Branch Association. For now, it assists farmers mainly in the selection and reproduction of animals, in the sale of the produced sheep milk and protects some of their economic interests.

Cooperation between Bulgarian family farms with sheep breeding specialization is imperative. Successful cooperation is a real opportunity that opens up a new horizon for individual producers, who can join their efforts to achieve a common goal - modern and effective sheep breeding in Bulgaria. The cooperative form of organization of production in the difficult sheep breeding sector can lead to a number of benefits and advantages for farmers, expressed in:

-*Access to new markets*– through the collective offering of sheep breeding products, farmers can increase their visibility and reach a wider customer group;

-*Better negotiating power*– through their cooperation, farmers can have greater leverage in negotiations with suppliers and traders, which will guarantee better prices and conditions for the supply of raw materials and the sale of their products;

-*Training and exchange of experience*– through cooperation between farmers, knowledge and experience can be shared, which will contribute to the improvement of their production practices;

-*Resource sharing*– promoting the sharing of resources, such as machinery and equipment, which can reduce costs for the individual farmer and increase production efficiency;

-*Financial access*– through cooperation, farmers will have guarantees and easier access to financing, which is currently very difficult for individual producers;

-*Participation in projects*– receiving support for inclusion in joint projects between farmers that support innovation, smart livestock farming and environmental protection;

-*Implementation of modern technologies and innovations* in sheep production – ensuring access to new technologies and innovations when farmers are members of one or more cooperatives.

In conclusion, the benefits for farmers of their membership in branch organizations, regional and national cooperatives in various forms can be numerous. There is a slow but steady awareness among farmers of such an opportunity, which will open up new horizons for the development of the Bulgarian, family sheep farming business.

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