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EVALUATION OF THE PERSPECTIVE OF THE DAIRY BUSINESS DEVELOPMENT BASED ON QUALITY MANAGEMENT

Abstract: The article deals with the analysis of the status and trends of the development of the dairy business in Russia, particularly through the example of the Stavropol Territory. The analysis is indicative of the relocation of milk production in the sector of small and medium agribusiness due to the cow population decline: on the one hand, in the sector of large agricultural enterprises, and on the other hand – in the sector of household plots. A dependence of economic efficiency of the dairy business on the increase in the size of cow population has been found, but the scale effect is underused because of inadequate investment attractiveness of this type of business. Quality management should be used for increasing it. The article presents the evaluation of possible changes of status of dairy breeding based on the forecast of the key performance indicators of the industry broken down by categories of households in the region through analytical graduation and trend extrapolation. The scenario forecasting of the development of the industry in the agricultural enterprises of the Stavropol Territory served as a basis for the identification of the focus areas of the state support of the of the dairy business development on the basis of quality management. Recommendations for increasing the efficiency of dairy business (with the help of increasing the productiveness of milk cows by means of increasing the breed structure of cattle, improvement of farms, implementation of the innovational technologies of cattle-breeding management, and improvement of feeding) and for increasing the quality and milk and milk products through refusal from using mixtures and through production of "eco-milk", its branding and certification are offered. Guaranteeing high quality of "eco-milk" (high nutrition, high fat level, and rich vitamin structure) will allow reducing elasticity of demand for it and will stimulate successful development of entrepreneurship.

Keywords: Dairy Business, Evaluation Of The Perspective Of The Development, Scale Of Production, Scenario Forecast, State Support, Quality Management.

1. Introduction

Dairy breeding is one of the main focus areas of animal industry, as it provides the population with the most essential high-protein and high-calorie food products. At

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the same time, the economy and the role of this industry in society has noticeably changed in recent years due to the improvement of the livestock management and nutrition technologies, their improved protection against diseases, new approaches to milk production as such. The issues of transition to organic milk production (Odhong, C. et al., 2014) and (Van der Werf, H.M.G., Kanyarushoki, C., Corson, M.S., 2009), development of the dairy industrial systems in the context of multifunctionality (Brummel, R.F., Nelson, K.C., 2014), the manufacture of dairy products with the observance of ethical norms (Anthony, R., Fregonesi, J.A., Vieira, A.D.P., 2015) and environmental protection (Hocquette, J.-F., Chatellier, V., 2011), (Arsic, S. et al., 2018), the contribution of the industry to sustainable rural development and increasing the level of employment (Ben Salem, M., Bouraoui, R., 2009). Quality management is the key factor of development of these markets.

At the same time, the problems of supporting the development of the dairy business and providing farmers with higher incomes continue to be relevant, especially in those countries where dairy breeding has not reached a high level of development and is not able to adequately supply its own population with dairy products (Alqaisi, O., Ndambi, O.A., Uddin, M.M., Hemme, T. 2010), (Swai, E.S., Karimuribo, E.D. 2011).

In recent years, the consumption of dairy products in Russia has decreased and amounted to 238 kg in 2016, which is 38% lower than the physiological rate of consumption approved in the country. in terms of consumption of dairy products, Russia is in arrears of many European states, as well as of several post-Soviet countries. Thus, according to Rosstat (Russian Federal State Statistics Service, 2019), the average consumption of dairy products per head of population (expressed in terms of milk) in 2015 in Azerbaijan was 272 kg, in Armenia – 258 kg, in Belarus – 254 kg. In Europe as a whole, this figure reaches 306 kg per person, and in Germany it exceeded 349 kg. The highest level of consumption of dairy products can be observed in New Zealand – 601 kg per head of population.

That notwithstanding, milk production volume in Russia is not increasing; quite the opposite, a certain decrease in its production can be observed. Thus, for the period from 2012 till 2016, milk production has decreased by 997.3 thousand tons or by 3.1%. The analysis shows that such dynamics is due to the 7% increase in milk yields per cow alongside with cow population decrease by 8%.

In the area of meat and dairy breeding, an increase in milk production requires quite a long time – 5 to 10 years. This is due to technological characteristics of the industry (long-term production cycle and high capital-output ratio), as well as low efficiency of milk production. The increase in prices for dairy products is immediately reflected on the level of their consumption, since the consumer demand for it is extremely sensitive to any market changes, changes in prices in the first place. Therefore, the dairy business in Russia has relatively low attractiveness when compared to other industries of agribusiness, and the analysis of development factors and the evaluation of available perspectives are necessary to ensure the economic growth of the industry.

The working hypothesis of the research is that improvement of the practice of quality management will allow reducing the elasticity of demand in the studied market and thus will stimulate it development. The purpose of the paper is to substantiate the necessity and to develop recommendations for dairy business development based on quality management through the example of the Stavropol Territory (Russia).

2. Literature review

The issues of managing the quality of milk and dairy products are not studied sufficiently in the existing scientific

literature. For example, the work Trukhachev et al. (2016) emphasizes the key role of quality management during increase of effectiveness and competitiveness of the family dairy business в Kaasboerderij Weenink (Netherlands). Importance of full-scale information support for achievement of high effectiveness of quality management of dairy business is noted in the work Qin and Wang (2009).

The influence of accessibility of pastures on the volume of fodder and quality and productiveness of cattle through the prism of forest use potential by the example of Central Minnesota (USA) is reflected in the work Ford et al. (2019). The necessity for consideration of quality (with emphasis on nutrition qualities of milk and milk products) during assessment of the life cycle of the cattle-breeding systems is emphasized in the work McAuliffe et al. (2018).

The work Ianni et al. (2018) notes that necessity for paying attention to chemical and nutrition qualities (oxidation stability of milk and dairy products) during management of quality of these products for development of dairy business (shown by example of Friesian cattle, which were given a dietary supplement of dried grape presscake).

For increasing the quality of milk and dairy products, Buhler et al. (2019) offer to use UV, which allows preserving the nutrition qualities of these products, which could not be achieved during the traditional heat treating (shown by the example of obtaining high-quality stabilized milk whey). Choudhary et al. (2019) write that quality of milk effects on chemical characteristics of buffalo milk concentrate during storage.

Thus, the performed literature overview showed that the existing publications note the importance of quality management for supporting high effectiveness, competitiveness, and sustainability of dairy business. Secondly, a lot of modern scholars, who study the issues of management of quality of milk and dairy products, note the insufficiency of the existing methods of quality management.

The regional specifics of dairy business are poorly studied, though, in our opinion, it influences the possibility of application of various methods of managing the quality of milk and dairy products. That's why in this paper we study the practice of managing the quality of milk and dairy products in the interests of increasing the effectiveness, competitiveness, and sustainability of dairy business in connection to a specific region – Stavropol Territory (Russia). Due to this, we determine not universal (widely accessible, but not always applicable in practice of separate husbandries) but private methods of management of quality of milk and dairy products. This allows achieving higher practical effect and determines the novelty and originality of the performed research as compared to the existing similar scientific literature.

3. Methodology

In the evaluation of the perspectives of the development of any industry or cluster, the results of economic analysis based on statistical data of the government, the analysis of operation of certain enterprises, as well as assessments and opinions of independent experts are conventionally used (Nikolaichuk et al., 2017), (Morkovina et al., 2014).

The evaluation of the perspectives of the development of such complex industry as dairy breeding requires comprehensive consideration of various aspects – territorial matters, structural matters, matters related to state support.

As noted by many researchers (Wolf, C.A.2003), (Anthony, R., Fregonesi, J.A., Vieira, A.D.P., 2015), the development of dairy breeding is nonuniform on the territory of any country. Therefore, the role of the studied region (Stavropol Territory) in milk production was determined in this study in the first place taking into account the natural specifics of the territory.

Another important aspect of the development of the dairy business consists in categories of

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enterprises and their dimensions, as well as technologies used. A comparative analysis of the structure of commodity producers in Russia and in the Stavropol Territory was made for the evaluation of this aspect. Depending on its size, statistical groupings for the analysis of efficiency of production were applied; besides, a survey was conducted among managers and professionals of 16 medium-sized and large agricultural enterprises engaged in dairy breeding.

The forecast of the key performance indicators of the industry – cattle population and the volumes of milk production broken down by categories of households and farms in the region in two alternative forecasts through analytical graduation and trend extrapolation – was made with a view to determining the possible changes in the condition of the industry. The choice of these indicators is due to the fact that the state support in dairy breeding is made in the form of compensation payment for management of each animal unit of cattle and per kilogram of top grade or superior grade milk which was sold or sent for own processing. The comparative analysis of two alternative persistence forecasts for the development of the industry in agricultural enterprises of the Stavropol Territory made it possible to clarify the focus areas of state support of the development of the dairy business.

4. Results

Milk production is nonuniformly distributed by federal districts of Russia. Volga Federal District is the top milk producer, since it accounts for 30.6% of the total volume of produced milk in the Russian Federation. The North Caucasian Federal District (which includes the Stavropol Territory) accounts for 13.5% cows of the total cow population in Russia and produces 9.1% of the total volume of milk produced in the country. Various levels of development of the dairy

business in federal districts and regions is due to natural, climatic and economic environment which impact the special aspects of cattle management: availability of agricultural lands and forage lands, their structure and quality, historically developed occupational skills of population.

The Stavropol Territory has great potential in terms of milk production. The region contains more than 2.4% of the total cow population in Russia and produces 2.2% of milk produced in the country. The Stavropol Territory ranks 12 in the ranking of milk-producing regions of the country. The milch cow productivity level in a dairy herd in the Territory is higher than that in the North Caucasian Federal District and in Russia in general, despite the fact that most of the area of the Territory is located in the subhumid zone, which prevents from obtaining low-cost feed for animals.

The structure of the dairy business in Russia is characterized by non-uniformity. More than 40% of cow population is concentrated in household plots which are mainly characterized by small size and the use of primitive technologies, inadequate level of zoological and veterinary service. At the same time, there is an entire network of large-scale high-technology and high-producing enterprises. One of the common trends in recent years consists in the change in the structure of producers, which is due to, on the one hand, the reduction of large-scale production, and on the other hand – the reduction of sector of microproducers – owners of household plots. Thus, cow population in agricultural enterprises has decreased by 8% for the period under consideration, while in household plots it has decreased by 12%. Nonetheless, a 21% increase in cow population in peasant farms has been observed (See Table 1). The large share of personal sector in milk production is the main reason for low merchantability of milk and is restrictive for the further development of the dairy business.

Table 1. Classification of cows according to categories of households in dairy breeding of Russia, thousand animal units

Indicator	2012	2013	2014	2015	2016	as a percentage of figure of year 2012
Households and farms of all categories – total	8859	8661	8531	8408	8264	93.3
Agricultural enterprises	3640	3533	3439	3387	3360	92.3
Rate of decline, as a percentage of figure of the preceding year	*-*	*-3.0*	*-2.6*	*-1.5*	*-0.8*	*x*
Household plots	4240	4089	4005	3882	3717	87.7
Rate of decline, as a percentage of figure of the preceding year	*-*	*-3.6*	*-2.0*	*-3.1*	*-4.3*	*x*
Peasant farms	979	1040	1086	1139	1188	121.3
Rate of increase, as a percentage of figure of the preceding year	*-*	*6.2*	*4.4*	*4.9*	*4.3*	*x*

Household plots in the Stavropol Territory occupy even a higher share in the cow population structure (58%). Agricultural enterprises account for as little as 21% for the present. Cow population decrease in agricultural enterprises and household plots by 7.5% and 6.8% respectively has shifted the relative share of milk production towards the sector of small agribusiness – farms. It is not always possible to obtain high quality products under the conditions of small-scale farming units. According to the Department of Agriculture of the Stavropol Territory, large-scale agricultural enterprises supply top grade and superior grade milk, whereas 82% of milk from the sector of small agribusiness is only received as second-class product.

The advantages of large-scale specialized production in dairy breeding are confirmed by many researchers (Rusev et al., 2012), (De Sousa e Silva et al., 2014), (Harrington et al., 2010), (Sraïri and Kiade, 2005). The Stavropol Territory is characterized by this dependence as well, which is proved by the analysis of efficiency indicators of 36 agricultural enterprises of the region with an annual average cow population of reproductive herd exceeding 150 animal units. In order to identify the main trends associated with the scale of agribusiness in dairy breeding, these agricultural enterprises were broken down into 4 groups according to the size of annual average cow population (See Table 2).

Table 2. Group classification of agricultural enterprises of the Stavropol Territory according to the size of dairy cattle population

Group	Number of agricultural enterprises	Annual average cow population, animal units	Annual average cow population per enterprise, animal units
1	11	below 250	177
2	11	251-500	339
3	5	501-750	628
4	9	above 750	1429

The smallest size of dairy cattle population in households and farms of group 1 is 117 animal units, and the biggest size of dairy cattle population in households and farms of

group 1 is in households and farms of group 4 – 3540 animal units.

The milk production volumes in households and farms with the smallest size of reproductive herd is 14 times higher than that in households and farms where the size of cow population is below 250 animal units. Direct labor costs per unit of output in households and farms of group 4 are 5.4 times higher when compared to households and farms of group 1, while in households and farms of group 2 and group 3 this indicator is virtually the same. Milk yield in households and farms of group 4 per cow is 75% higher when compared to households and farms of group 1 (See Table 3).

Table 3. The output of products in agricultural enterprises of the Stavropol Territory (per enterprise)

Indicators	Group			
	1	2	3	4
Reproductive herd of dairy cattle, animal units	177	339	628	1429
Livestock management and nutrition, animal units	332	664	1405	1670
Milk production, tons	699.1	1820.9	3557.2	9990.2
Milk yield per animal unit, kg	3950	5370	5660	6990
Total cost, thousand rubles	15166	38043	66570	201241
Milk production cost, rubles per ton	212.3	223.0	191.9	193.8
Direct labor costs per unit of output, thousand work hours	24	60	68	129

The data in Table 4, too, gives evidence of a positive effect of the scale of production in dairy breeding. Thus, in households and farms with the biggest size of cow population the level of profitability of production is equal to 22.6%, while milk production is wasteful in households and farms with the minimum cow population. The revenue from sales of milk in households and farms of group 4 is 17.7 times higher than that in households and farms of group 1.

Table 4. Sales of livestock products in agricultural enterprises of the Stavropol Territory (per enterprise)

Indicators	Group			
	1	2	3	4
The volume of sales of milk in gross weight, tons	629.2	1702.2	3240.5	9448.8
Total cost of sales of milk, thousand rubles	13924	35990	60633	193704
Cost of sales of 1 ton of milk, rubles	221.3	211.4	187.1	205.0
Selling price of 1 ton of milk, rubles	213.4	221.5	241.3	251.3
Revenue from sales of livestock products, thousand rubles	22972	54336	105517	281507
Revenue from sales of milk, thousand rubles	13426	37698	78186	237418
Profit on sales of milk, thousand rubles	-498	1708	17553	43714
Level of profitability, %	-3.6	4.7	28.9	22.6

State support is another important factor of operating efficiency of agricultural enterprises. The regional program for the development of the industry and an increase in milk production volumes is being efficiently implemented in the Stavropol Territory. This program is funded out of two sources: from federal budget and from

territorial budget. The agricultural producers of the Territory (except for the owners of household plots) are granted subsidies for the recovery of part of the costs per liter of milk sold. State support allows agricultural producers to recover part of their costs and is primarily aimed at the increase in the volume of production, the increase in the size of cow population, reduction of loss ratio of the dairy business. The program is aimed at reducing social strain in the countryside and creating new jobs. The promotion of

investment attractiveness of the dairy business is included in the priority list of the program as well.

That said, state support is distributed by groups of enterprises irregularly. Thus, the level of state support in households and farms of group 4 is 5 times higher than that in households and farms of group 1; furthermore, more than half of budgetary funds are spent directly on animal breeding (See Table 5).

Table 5. The structure of state support in agricultural enterprises of the Stavropol Territory (per enterprise)

Indicators	Group							
	1		2		3		4	
	thousand rubles	%	thousand rubles	%	thousand rubles	%	thousand rubles	%
Budgetary funds received	7518	100	13977	100	13656	100	38343	100
including: out of the federal budget	6945	92.4	12833	91.8	12263	89.8	33434	87.2
out of the budget of the Stavropol Territory	573	7.6	1144	8.2	1393	10.2	4909	12.8
of them: received for animal industry	1231	16.4	2944	21.1	2735	20.0	19229	50,1

Households and farms of group 4 require almost twice as much budgetary funds per animal unit of reproductive herd as
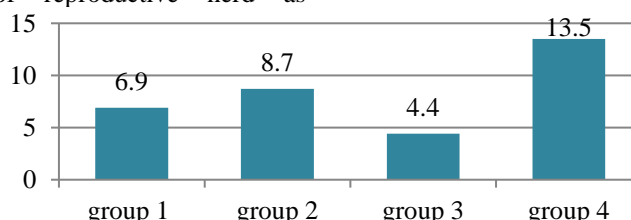
households and farms of group 1 (See Figure 1).

Figure 1. Amount of budgetary funds per animal unit of reproductive herd in agricultural enterprises of the Stavropol Territory, thousand rubles

In this regard, more than half volume of budgetary funds (52.2%) in the structure of state support of agricultural enterprises falls on households and farms of group 4 with the highest annual average cow population. It should be noted that the advantages of large

scale farms in the receipt of budget payments can be observed not only in Russia. The same state of things has been discovered in the assessment of efficiency of compensation payments to milk producers in the United States (Chang and Mishra, 2011).

Hence, dairy breeding in agricultural enterprises of group 3 with an annual average cow population of 501 to 750 animal units is the most commercially viable business area in the Stavropol Territory. However, households and farms of group 4 with an annual average cow population of 1429 cows, most of which are brood animals, receive the highest amount of funds of state support. The management of less than 500 cows in households and farms is marginally profitable or unprofitable.

The forecast of the key performance indicators of the industry was made with a view to determining the perspectives of the development of the dairy business in the Stavropol Territory; the values of these performance indicators define the size of state support. In this case, the "business as usual" scenario of further development of the industry was considered, which implies moderate rate of development (See Table 6). According to this scenario, the trend of simultaneous relocation of milk production from large scale production and microfarms to small and medium households and farms is expected to be preserved.

Table 6. Projected growth of the dairy business of the Stavropol Territory

Indicator	Actual figure					Estimated figure					2021, as a percentage of figure of year 2016
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Number of cows, thousand animal units											
Households and farms of all categories:											
cattle	383.1	400.8	389.9	384.3	376.7	378.2	375.2	372.3	369.4	366,4	97.3
cows	192.0	202.7	203.1	204.2	202.4	207.5	209.8	212.0	214.2	216.4	106.9
Agricultural enterprises:											
cattle	120.5	122.1	116.7	111.8	106.1	103.7	99.8	95.9	92.0	88.1	83.0
cows	45.2	45.0	43.6	42.4	41.8	40.8	39.8	38.9	38.0	37.0	88.6
Household plots:											
cattle	227.5	227.5	219.0	211.7	206.3	201.0	195.2	189.4	183.5	177.7	86.2
cows	126.1	126.1	121.8	118.9	117.6	114.8	112.4	110.0	107.5	105.1	89.4
Peasant farms:											
cattle	35.2	51.3	54.3	60.8	64.3	73.5	80.3	87.1	93.8	100.6	156.5
cows	20.7	31.5	37.7	42.9	43.0	52.0	57.6	63.1	68.7	74.3	172.9
Milk yield per cow, kg											
Households and farms of all categories	4,096.0	4,340.0	4,478.0	4,537.0	4,708.0	4,858.1	5,000.2	5,142.3	5,284.4	5,426.5	115.3
Agricultural enterprises	6,111.0	6,088.0	6,161.0	6,208.0	6,239.0	6,274.2	6,311.8	6,349.4	6,387.0	6,424.6	103.0
Household plots	3,697.0	4,072.0	4,222.0	4,264.0	4,460.0	4,658.4	4,830.2	5,002.0	5,173.8	5,345.6	119.9
Peasant farms	3,809.0	3,611.0	3,659.0	4,002.0	4,010.0	4,056.1	4,135.4	4,214.7	4,294.0	4,373.3	109.1
Milk production in households and farms of all categories, thousand tons											
Households and farms of all categories	665.3	681.3	686.8	687.4	681.5	692.0	695.9	699.7	703.6	707.4	103.8
Agricultural enterprises	136.8	136.9	137.3	137.4	138.8	138.8	139.2	139.7	140.1	140.6	101.3
Household plots	506.9	518.4	519.4	515.9	505.1	511.3	510.7	510.1	509.5	508.9	100.7
Peasant farms	21.6	25.9	30.1	34.1	37.6	41.9	45.9	50.0	54,0	58.0	154.3

The projected values of the key performance indicators of the industry broken down by categories of households and farms have different dynamics and are presented in Figures 2-5.

The cattle population in the Stavropol Territory will be reduced in accordance with the trend to 366.4 thousand animal units (See Figure 2). In accordance with the persistence forecast, the increase in cattle population to 100.6 thousand animal units will only occur in peasant farms in 2021. A negative dynamics of this indicator has been observed in agricultural enterprises and household plots in accordance with the trend.

Cow population in the Territory will increase to 216.4 thousand animal units in 2021 solely through the increase in the number of cows in peasant farms to 74.3 thousand

animal units in 2021 (See Figure 3). Cow population in agricultural enterprises and household plots will decrease by 11.4%.

In 2021, milk yield per cow will increase in accordance with the trend to 5426.5 kg. The positive dynamics of this indicator has been observed in all categories of households and farms: in agricultural enterprises - to 6424.6 kg, in household plots - to 5345.6 kg, in peasant farms - to 4373.3 kg (See Figure 4).

The growth trend and milk production volume of 707.4 thousand tons in 2021 can be achieved by means of household plots and small-scale producers up to 508.9 thousand tons and 58.0 thousand tons respectively. This being said, the maximum decline of indicator can be observed in agricultural enterprises (See Figure 5).
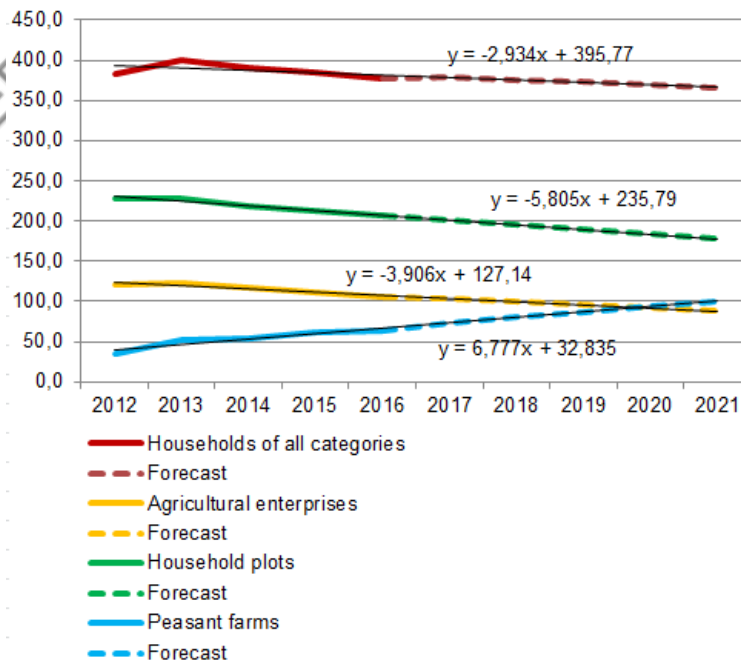

Figure 2. Cattle population dynamics broken down by categories of households and farms in the Stavropol Territory, thousand animal units
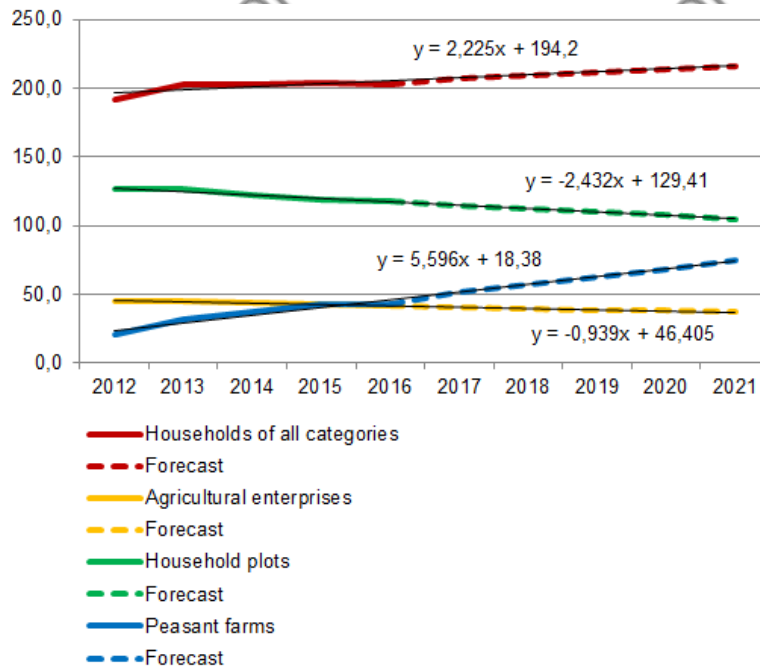
Figure 3. Cow population dynamics broken down by categories of households and farms in the Stavropol Territory, thousand animal units
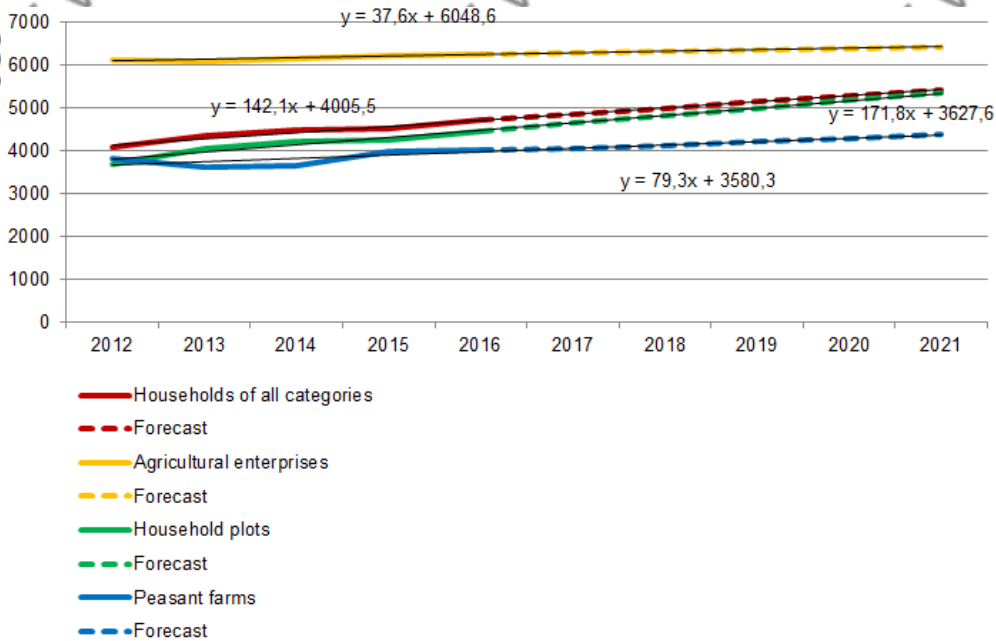

Figure 4. Dynamics of milk yield per cow broken down by categories of households and farms in the Stavropol Territory, kg

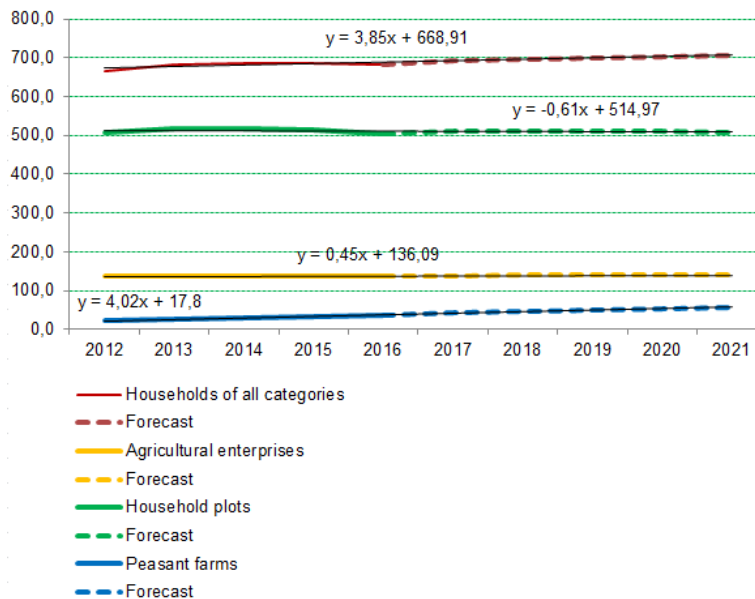*N. V. Bannikova, T. N. Kostyuchenko, N. N. Telnova, S. S. Vaytsekhovskaya*

Figure 5. Milk production dynamics by categories of households and farms in the Stavropol Territory, thousand tons

If the trends that have established in recent years will not change and the dairy business of the Stavropol Territory will be developed by inertia, we can expect the deterioration of situation in agricultural enterprises caused by cow population decrease and relocation of milk production from large scale production to small scale farms. This inference was supported by the data of a survey of managers and professionals of 16 medium-sized and large agricultural enterprises engaged in dairy breeding

The reasons for unprofitability of agribusiness in dairy breeding include not only adverse market factors, but also inefficiency of the established forms of organization of production causing low milch cow productivity and high product cost. However, given the importance of milk as a food product and the presence of significant resources for its production in the region, it is necessary to preserve and develop the industry based on achievements in selective breeding programs, comprehensive mechanization and

automation of production processes, sizing, concentration and specialization of production.

It is obvious that in order to change the current trend, the work on the construction of new large-scale farms as well as on renovation of existing farms should be continued with state support, despite the crisis phenomena in the domestic agrarian economy. Other researchers (Altukhov et al., 2016), (Shelkovnikov et al., 2016), (Subaeva et al., 2018) also point out to the importance of state policy of promotion of the dairy business in Russia. The issues of the use of innovative technologies as the basis for the development of modern agribusiness have received much attention in other countries as well (Sobratee and Bodhanya, 2017), (Adenle et al., 2017) etc.

In order to clarify the focus areas of state support and determine its expected results for agricultural enterprises, two scenarios of development of the industry have been considered; they are distinguished by the value of the parameter "productivity". In the

first alternative forecast, milk yield per cow corresponds to that of 2016, while in the second alternative forecast an increase in milch cow productivity of up to 6424.6 kg is expected in accordance with the calculated trend. Cow population was calculated in accordance with the trend at a level of 37 thousand animal units (See Table 7).

Table 7. Alternative persistence forecasts for the development of dairy breeding in agricultural enterprises of the Stavropol Territory

Indicator	Actual figure for 2016	Estimated figure for 2021		2021, as a percentage of figure of year 2016	
		alternative forecast 1	alternative forecast 2	alternative forecast 3	alternative forecast 4
Cow population, thousand animal units	41.8	37.0	37.0	88.6	88.6
Milk yield per cow, kg	6239	6239	6424.6	100.0	103.6
Milk production, thousand tons	138.8	124.7	140.6	89.8	101.3

According to the calculations of the first alternative forecast, cow population decrease by 11.4% event at a stably high milk yield per cow cause the decline in milk production in agricultural enterprises by 10.2%. In case of an increase in milch cow productivity by 3.6% milk production in agricultural enterprises can be increased by 1.3% even in case of reduction of cow population by 11.4%. Given the fact that in 2016 agricultural enterprises of the Stavropol Territory came up to the highest level of productivity for the recent 5 years, its further increase is possible, in the first place, due to the improvement of the system of livestock management and nutrition, reduction of morbidity rate etc. Capital-intensive activities (the use of more productive cow breeds, renovation of farms, purchase of modern equipment) need state support, since own financial capabilities of the dairy business are limited.

5. Conclusions/recommendations

The dairy breeding industry in Russia has been lacking necessary development in recent years; the volumes of milk production are not increasing, efficiency of the dairy business is low. It has a negative effect both on self-supply of dairy products and on the employment of agricultural population. This situation is typical for individual regions as well. In dairy breeding of the Stavropol Territory, as well as in the whole country, there is a tendency of gradual relocation of milk production from large scale farms and microfarms to the sector of small and medium agribusiness. The analysis of the key performance indicators of the industry was used to identify the positive dependence of economical efficiency of the dairy business from the size of agricultural enterprises, which shows the presence of scale effect and its underutilization in dairy business.

The comparison of the two alternative forecasts for the development of dairy breeding in the Stavropol Territory testifies that the perspectives of the development of the industry are associated with an increase in milch cow productivity, particularly in specialized large scale farms in the first place. Financial and non-financial measures of state support in terms of improvement of breed composition of cattle, renovation of farms, introduction of innovative technologies of livestock management and nutrition will contribute to overcoming the industry's stagnation and promoting the attractiveness of the dairy business.

This will allow increasing the quality of dairy products through improvement of its nutrition and vitamin qualities. As a perspective measure of reduction of elasticity of demand for the price in the

studied market, refusal from usage of dry mixtures during production of milk and dairy products is offered.

Also, large-scale marketing support (with the help of advertising and PR) of the „eco-milk" brand – mil and dairy products that are made of natural dairy products wihout any synthetic supplements and dry mixtures – is offered. Another perspective measure is development of a private system of certification fo quality of „eco-milk", which guarantees the announced useful qualities (nutrition, fat level, and vitamin structure). This will allow increasing the competitiveness of milk and dairy products as compared to replacement products. Stability of demand for milk and dairy products will allow increasing the investment attractiveness of business, which will allow starting a cyclic mechanism of icnreasing the efficiency of companies that produce dairy products and increasing the „eco-milk" brand, thus accelerating the development of entrepreneurship.

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