

State support for agriculture based on the development of commodity lending in animal husbandry

*Elena Korshikova*¹, *Konstantin Titorenko*¹, *Maria Moskaleva*¹, *Kirill Zhichkin*^{1,*}, *Vladimir Nosov*², and *Lyudmila Zhichkina*¹

¹Samara State Agrarian University, 1, Uchebnaya St., 446442 Kinel, Russia

²Plekhanov Russian University of Economics, Moscow, 36, Stremyanny per., 117997, Russia

Abstract. The relevance of the study is due to the fact that commodity lending is a fairly new procedure for agricultural producers in the field of state support, it is designed to ensure the stable development and support of the main agricultural producers, including livestock. The purpose of the study is to improve state support for the agro-industrial complex, taking into account commodity lending. Competent organization of the process of commodity lending, taking into account all possible directions for improving this activity, will ensure the smooth and efficient operation of SUE SR “Veles”, the Ministry of Agriculture of the region, agricultural producers of the agro-industrial complex in the field of commodity lending and, as a result, will strengthen the economy of the region as a whole. At the same time, in order to improve the efficiency of commodity lending in the agro-industrial complex of the Samara region, it is proposed to introduce a system of control over the use of funds allocated for commodity lending, according to grants, subsidies, state support, to optimize the targeting of the received funds for commodity lending, in order to prevent their further use for other purposes.

1 Introduction

The relevance of the study is due to the fact that commodity lending is a fairly new procedure for agricultural producers in the field of state support, it is designed to ensure the stable development and support of the main agricultural producers, including livestock [1-5]. The need to study commodity lending as one of the measures of state support for the agro-industrial complex (AIC) is determined by the important role of the industry. The problem of finding and implementing the most promising methods of state financing of the agricultural sector is coming to the fore today. In the Russian Federation, the practice of commercial lending is limited territorially (Tambov, Samara regions and a number of other regions) and functionally (support for the acquisition of commercial and breeding animals for completing the herd) [6-10].

* Corresponding author: zskirill@mail.ru

The basis for the stability of the economic, social, political situation in society and the world depends primarily on the efficiency of the agro-industrial complex.

Dairy production is one of the leading sectors of the agro-industrial complex and the food industry. The importance of dairy products in the diet is traditionally very significant. Milk and dairy products are necessary for all age groups of the population. According to its chemical composition and nutritional properties, milk has no analogues among other types of natural products. They are a source of essential nutrients and biologically active substances that can meet the needs of the body: amino acids, fatty acids, minerals, vitamins.

In the context of import substitution, the basis for ensuring the food security of the region is to increase the efficiency of dairy cattle breeding [11-14].

Dairy cattle breeding is one of the system-forming branches of the agrarian economy, occupying 70% of the gross livestock production. Dairy products take the 3rd place in the commodity structure of the food retail turnover. Due to the wide distribution, the daily receipt of funds from the sale of products, dairy cattle breeding contributes to a certain extent to the current financial stability of agricultural enterprises, moreover, dairy cattle breeding acts as a kind of locomotive for the development of the industry, consuming significant volumes of crop production [15-18].

In recent years, the development of this industry has been given great economic importance.

The purpose of the study is to improve state support for the agro-industrial complex, taking into account commodity lending.

As part of this, it was supposed to solve the following tasks: - to analyze literary sources on the development of dairy farming and commodity lending; - analyze data on the use of commodity lending as an element of state support in the conditions of the Samara region; - develop proposals for improving state support measures, including commodity lending for the development of dairy farming in the region.

2 Materials and methods

The theoretical basis of the study was the work of domestic and foreign scientists in the field of animal husbandry, programs for the development of dairy farming in the region, data from the Ministry of Agriculture and Food of the Samara Region. In the course of the study, the following were used: analysis of statistical data and economic information, historical method, abstract-logical method, modeling method, methods of expert assessments.

$$Wob = \frac{P1}{P2} ,$$

where Wob is the level of provision,

P1 - milk production,

P2 - industrial and personal consumption.

The level of provision is calculated as the ratio of the indicator of milk production to the indicator of industrial and personal consumption. It characterizes the adequacy of the volume of production to fully meet demand.

3 Results

The dairy industry in agriculture is key. Year-round employment of people, food security, domestic consumption of crop products, economic interconnections and other factors determine its paramount importance [19-21].

The role of dairy farming in the social development of rural areas is also enormous. Everyone knows that a village cannot survive without a farm. The extinction of villages has already acquired a steady trend. One of the main reasons is the collapse of dairy farms, which gave work to the villagers and supported their households [22-25].

In this regard, in order to meet the population's demand for milk and dairy products at the expense of a local producer, in order to preserve villages and a decent life for rural residents, it is necessary to consider the problem of increasing milk production as a priority task of national importance [26-29].

Those who know the specifics of dairy farming understand that the cardinal measures taken today will give results only in three years. Since this is the minimum period with perfectly coordinated actions of all project participants: the customer, designer, builders, suppliers of animals and equipment, fodder, etc. [30-34] And, most importantly, with full timely funding.

In order to assess the possibility of implementing the tasks set for the dairy industry, it is necessary to analyze in detail the current state of the dairy industry in the region and assess the development prospects.

The Samara region, according to the Center for the Study of the Dairy Market, is one of the deficit regions in terms of the availability of dairy and beef cattle products. The doctrine of food security of the Russian Federation provides for the provision of the country with its own milk and dairy products by at least 90%. Currently, the provision of own products in the region is slightly more than half of consumption, and processing enterprises use a large amount of imported raw materials. Samara dairies are forced to buy half of the raw milk for more than 3 billion rubles a year from neighboring regions. The expenses of the inhabitants of the province for imported dairy products amount to tens of billions of rubles annually. This money is flowing out of the provincial economy.

Table 1. Indicators of production and consumption of milk and dairy products in the Samara region.

Indicators	2017	2018	2019	2020	2021
Production, thousand tons	454.2	438.6	446.0	453.7	455.5
Consumption, thousand tons	799.1	787.0	791.6	806.6	801.2
Security level, %	56.8	55.7	56.3	56.2	56.9

As Table 1 shows, in order to meet domestic demand, the region needs to increase production volumes by 345.7 thousand tons of raw milk.

The dairy market of the Samara region has a significant development reserve. In this regard, one of the most important and complex tasks facing the region, and to be solved in the coming years, is to increase the share of marketable milk in total production and increase profitability in dairy farming.

In animal husbandry, the animal must be in the first place and the satisfaction of all its needs in order to obtain the maximum return. And in this complex industry, there are no trifles. For the flawless operation of the long mechanism "agronomy - forage harvesting - feeding and keeping cows - obtaining quality products", not a single issue, not a single smallest problem should be overlooked. And even more so, it is impossible to stop there, putting an end to the further development of production. This would be wrong. In this matter, the main role is assigned to the management and livestock specialists. You can buy an expensive livestock of highly productive cows, high-quality feed additives, equip the

veterinary service with a wide range of medicines, but first of all, the focus should be on the accurate work of specialists. Only then will this mechanism work and bring a certain profit to the industry.

An analysis of the existing herd showed that there are big problems here. Many dairy farms in our region, along with high-yielding cows, have in their "arsenal" such specimens that produce 1500-2000 liters of milk per year. And the proportion of such cows in the herd is significant. In the same number, individuals occupy a place in the cowsheds, which are fruitfully inseminated from 3-4 times. If you look at this problem, covering all the years of a cow's productive life, then by simple calculations you can understand that we lose 1, and sometimes even 2 calves from such cows in her entire productive life.

In the conditions of the modern economy, it is advisable to keep highly productive cows with an annual milk yield of 5000-6000 kg, in breeding plants - 7000-8000 kg. In practice, it has been proven that the profitability of a modern dairy farm is directly related to the milk yield of cows. As a result, livestock breeders of countries with developed dairy cattle breeding use various zootechnical methods to increase their productivity. At the same time, the number of dairy cows, as a rule, decreases with an increase in milk production. The content of highly productive cows is justified by their cost-effectiveness. It is an obvious fact that one highly productive cow, giving 6000 kg, replaces two cows with a milk yield of 3000 kg. Highly productive animals need half as many rooms, while in new barns the cost of a cattle place exceeds 20-25 thousand rubles. To service high-yielding cows, significantly fewer milking machines, machines and other expensive equipment are needed. One of the main advantages of highly productive cows is their ability to most efficiently process feed protein into milk protein. In addition to receiving high milk yields, the breeding farm receives a considerable income from the sale of breeding young animals. A highly productive cow is a level of animal husbandry culture, which is based on a lower feed consumption per liter of milk, a viable offspring, a healthy environment.

Dairy productivity is influenced by a whole range of factors, of which feeding, its level and usefulness should be put in the first place; on the second - the genotype of animals, and on the third - the conditions of detention. But the realization of the genetic potential also depends on how correct the feeding and maintenance technology will be.

In the current economic conditions, the efficiency of animal husbandry has become even more relevant. The government of the Samara region is taking a whole range of measures. State support for the regional agro-industrial complex in 2021 is carried out in 42 areas, 18 of which are focused on increasing the volume of livestock production.

In order to effectively develop dairy cattle breeding in the region, there are state support mechanisms, including reimbursement of part of the costs incurred in connection with the production of agricultural products, to support own milk production, the purchase of high-protein feed to ensure the growth of production in dairy cattle breeding, to pay an insurance premium, accrued under an agricultural insurance agreement, as well as grant support for small businesses and reimbursement of part of the costs when the farm switches from pig breeding to alternative types of animal husbandry.

For the development of pedigree livestock breeding in the region, the maintenance of pedigree breeding stock and the acquisition of pedigree young animals of agricultural animals are subsidized.

In order to increase the livestock of farm animals, including breeding ones, in June 2010, the state unitary enterprise of the Samara region "Samara Livestock Development Center "Veles " was created. SUE SR "Veles" was reorganized on March 9, 2022 in the form of transformation into a non-public joint-stock company "Veles". The founder of "Veles" JSC is the Ministry of Property Relations of the Samara Region [35-37].

The main activity of "Veles" JSC is the purchase and supply of the breeding stock of cattle and small cattle necessary for further reproduction to agricultural producers in the

region. The introduction of unique methods of stimulating animal husbandry in the Samara region provided a tangible leap in the development of the industry.

As part of the implementation of the tasks set, "Veles" JSC purchases commercial and pedigree cattle outside the Samara Region and transfers it to legal entities, peasant (farm) enterprises, individual entrepreneurs, personal subsidiary farms (PSP) of citizens engaged in agricultural activities in the Samara Region for contractual terms.

Marketable and pedigree cattle are provided to agricultural producers on the terms of a commodity loan, which neither leasing companies nor banks can offer more profitable today.

In order to receive a commodity loan, the recipient of the livestock of farm animals needs to submit an application and collect a package of documents, the list of which is established by the procedure for selecting recipients of the livestock of farm animals for concluding commodity loan agreements [38-42]. Subject to the fulfillment of the necessary requirements for concluding an agreement, "Veles" JSC transfers livestock to farmers of the Samara region.

The main requirements for recipients of livestock are the availability of a forage base and ready-made premises for keeping new livestock, as well as the availability of collateral and insurance of the received livestock. In addition, as a security for the fulfillment of obligations under commodity loan agreements, the recipient must ensure the provision of a personal guarantee and (or) third parties acting on the side of the recipient.

According to the current conditions for concluding a commodity loan for providing livestock of agricultural animals to legal entities, individual entrepreneurs, peasant (farmer) households, citizens leading personal subsidiary plots, carrying out agricultural activities in the Samara Region, commodity loan agreements for the transfer of livestock of cattle are concluded for a period up to 8 years, and small cattle - up to 5 years.

The return of the commodity loan subject is made by the same animals (of the same kind and quality) that were transferred under the commodity loan agreement. The products obtained from the provided livestock (offspring, milk, etc.) are the property of the recipient of a commodity loan, which they can dispose of at their discretion.

Funds are allocated from the regional budget for the implementation of the program. Interest paid under a trade credit agreement is subsidized in full.

To date, the current state of commodity lending to the agro-industrial complex is in many ways a prerequisite for the development of the economy and an integral element of the country's economic growth. It is with the help of commodity lending that one can try to solve the problem of milk shortage in the Samara region. We have proposed 2 options for solving this problem, with the same initial data. Let's take as a basis that the current level of milk production will remain unchanged - 455.5 thousand tons.

Let us calculate in a 5-year perspective an increase in milk production to fully satisfy regional demand. To achieve this indicator, along with the existing herd, we will form a new herd by purchasing Holstein cows of German selection. In recent years, the importance of the Holstein breed, bred in the United States, Canada and several European countries, has increased significantly in those parts of the world where cow's milk and products made from it form a significant part of the diet of the population. This breed is widely used as an improvement when breeding related black-and-white breeds, as well as when crossing with dairy and milk-meat breeds. The Holstein breed is characterized by precocity, good fertility and easy calving. With good feeding and maintenance, heifers reach a live weight of 350-380 kg by the age of 15 months and can be inseminated. Given the high level of milk yield of cows of this breed, their intercalving period is most often 13-14 months, which is much longer than that of black-and-white cattle in Russia. At present, the cost of a cow of the Holstein breed of German selection is 142,000 rubles.

According to the first option, in order to achieve a level of 100% milk supply in the region in the first year, we will offer to immediately purchase the required number of cows of the Holstein breed of German selection.

Table 2. Predictive calculation option 1.

Indicators	2023	2024	2025	2026	2027
Receipt of cows, goal.	49385	-	24396	21956	34421
Total cows, heads	49385	49385	73781	95737	130158
Gross milk yield, thousand tons	345.7	355.6	526.3	684.9	930.2
Exit of calves, goal	48792	43912	68842	87298	119137
including heifer, heads	24396	21956	34421	43649	59568
Milk demand, thousand tons	345.7	345.7	345.7	345.7	345.7
The need for a carriage of milk, thousand tons	0	0	0	0	0
Export of milk, thousand tons	0	9.9	180.6	339.2	584.5

Analysis of the data showed that starting from the 2nd year, the region will be able to export 9.9 thousand tons of milk, or increase its processing in the region. By the end of the billing period, a breeding dairy herd will be formed in the region in the amount of 130.16 thousand heads. The level of milk supply will be 173%. The Samara region will be able to export to other deficit regions, in terms of milk supply, - 584.5 thousand tons of milk.

With this calculation option, the cost of acquiring cows will amount to 7012.67 million rubles, but to maintain such a number of cows, it is necessary to build a huge dairy complex, and this is still a colossal infusion of funds, which is ten times more than the cost of breeding cows.

Another problem is the problem of staffing. The effectiveness of the functioning of any organization of the agro-industrial complex directly depends on its staffing. The socio-economic situation in the rural areas of the region remains tense, the rate of decline in the rural population is not decreasing. The age structure of the rural population is also unfavorable, the proportion of the population of working age (55.8%) is significantly lower than in the city (59.3%) and is declining faster. Moreover, this process is long-term. The modern period is characterized by the "aging" of personnel, the reluctance of young specialists to work in the countryside, which leads to a low professional level of the personnel of the agro-industrial complex.

Low wages and the poor quality of most jobs in agriculture exacerbate labor market imbalances, resulting in a continuing negative trend in the outflow of highly qualified personnel in this area.

Based on the current realities and in order to minimize the initial costs, we will calculate a gradual increase in milk production, so that by the end of the 5th year, the Samara region will independently meet the demand for milk by 100%.

Table 3. Predictive calculation option 2.

Indicators	2023	2024	2025	2026	2027
Receipt of cows, goal.	18410	0	9095	8185	12678
Total cows, heads	18410	18410	27505	35690	48367
Gross milk yield, thousand tons	128.9	132.6	196.2	255.3	345.7
Exit of calves, goal	18189	16370	25356	32544	44261
including heifer, heads	9095	8185	12678	16272	22130
Milk demand, thousand tons	345.7	345.7	345.7	345.7	345.7
The need for a carriage of milk, thousand tons	216.8	213.1	149.5	90.4	0.0
Export of milk, thousand tons	0	0	0	0	0

An analysis of the data in Table 3 shows that in order for the region to independently fully satisfy the need for milk of the inhabitants of the region in the fifth year of the planned period, it is necessary to produce commodity lending with cows of the Holstein breed of German selection in the first year in the amount of 18410 heads. The level of milk supply only in the last year of the planned period will be 100%. To implement this project, the purchase of cows will require 2614.2 million rubles. By the end of the billing period, a dairy breeding herd in the amount of 48.37 thousand heads will be formed in the region, which will be able to satisfy the demand of the inhabitants of the region in milk.

In the course of the study, it was found that the formation of a highly productive herd is a long-term, painstaking work. The creation of such a herd takes a long time and considerable material costs. Therefore, no, even the smallest errors in this matter are unacceptable, since they can lead to serious losses. Highly productive, pedigree cows are very demanding on all issues related to the technology of keeping and feeding. But with the right approach to these issues, one can expect adequate returns from them.

Credit for agricultural producers - together with budget financing - is one of the most important external sources of investment activity of agricultural enterprises.

In recent years, the state has tried various methods of lending to agricultural producers (commodity credit, lending through a special fund) in order to find the most optimal of them, which would equally suit both agricultural producers and banks.

A study of the financial support of agro-industrial enterprises, including agricultural producers, indicates that they mainly work at the expense of their own resources, which are currently significant in terms of specific weight, but insufficient for self-financing.

Strengthening and growth of agro-industrial production in the Samara region is unthinkable without an active credit policy, that is, without meeting the needs of agricultural producers in long-term and short-term funds. At the same time, the share of long-term borrowed funds is steadily approaching zero, and practically only short-term loans are issued in the Samara region.

A significant form of lending to agricultural producers is a commodity loan. To avoid an unreasonable increase in commodity lending to the detriment of monetary lending, it is necessary to create an appropriate combination of forms of both commodity and monetary credit, to ensure their equal availability and the right of the borrower to choose the most rational, from his point of view, type of loan.

Commodity credit, provided with the participation of the state, acts in the form of supplies of fuels and lubricants, animals, mineral fertilizers, seeds, leasing of equipment. In the current realities, in the absence of a choice for agricultural enterprises, the lack of development of the infrastructure of the agricultural market, commodity lending, supported by the state, plays an increasingly important role.

The mechanism of commodity state lending used today requires improvement, in particular:

- prices for the resources provided should not be higher than the average market prices prevailing in the region;
- suppliers of resources for commodity credit should be determined on a competitive basis with the conclusion of relevant agreements with the state.

At the same time, in order to improve the efficiency of commodity lending in the agro-industrial complex of the Samara region, it is proposed to introduce a system of control over the use of funds allocated for commodity lending, according to grants, subsidies, state support, to optimize the targeting of the received funds for commodity lending, in order to prevent their further use for other purposes.

4 Conclusion

The proposed recommendations will contribute to the improvement of the process of commodity lending to the agro-industrial complex in modern conditions, both in the medium and long term. Competent organization of the process of commodity lending, taking into account all possible directions for improving this activity, will ensure the smooth and efficient operation of SUE SR “Veles”, the Ministry of Agriculture of the region, agricultural producers of the agro-industrial complex in the field of commodity lending and, as a result, will strengthen the economy of the region as a whole.

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