AGRIBUSINESS DEVELOPMENT BASED ON IMPROVED MATERIAL AND TECHNICAL RESOURCES AND COOPERATION

Konstantin Kolotyrin[1*]
Kanbibi Nursapina[2]
Nazim Ahmetzhanova[2]
Saltanat Yessengaliyeva[2]
Aigul Kazambayeva[2]
Amina Traissova[3]

[1] Federal State Budgetary Educational Institution of Higher Education Saratov State Agrarian University named after N. I. Vavilov.
[2] West Kazakhstan Agrarian-Technical University Named after Zhangir Khan.
[3] West Kazakhstan Agrarian-Technical University Named after Zhangir Khan.
[4] West Kazakhstan Agrarian-Technical University Named after Zhangir Khan.
[5] West Kazakhstan Agrarian-Technical University Named after Zhangir Khan.
[3] Makhambet Utemisov West Kazakhstan State University.

*Corresponding author e-mail: Nursapina_Khanbibi@mail.ru.

ABSTRACT: The problem of effective agriculture functioning is associated with such factors as the development of small and medium agribusiness, cooperation, the development of the material and technical resources. In this connection, the article proposes the development of an organizational-economic mechanism of cooperation and the improvement of the agribusiness. Different variants of cooperation, increasing the efficiency of the agro-industrial complex, are described. Mutual benefits from agricultural cooperation for small and medium-sized businesses are substantiated.

Keywords: Agriculture, material and technical resources, small and medium-sized agribusiness, cooperation, risks.

INTRODUCTION

As we know, the basis of a stable civil society is small and medium business, and business performance in the Russian Federation depends on the development of this sphere. In particular, small business performs an important mission, supporting consumer activity, and providing substantial tax revenues to budgets of all levels. It is also important to note that agribusiness provides employment for the economically active population, primarily in rural areas, forms a layer of entrepreneurs-owners, contributes to structural shifts and prevention of structural unemployment. The development of agribusiness is the main factor of market transformations in the agro-industrial complex. Agribusiness has such features as: high socio-economic significance, high level of competition, significant role of the State, high degree of risk due to the peculiarities of

agricultural production. The risks include the great dependence of agricultural production on natural and climatic conditions; seasonality of agricultural production, requiring special approaches to the use of labor, production and financial resources; a combination of biological, social and production-economic factors in production, leading to the need for their harmonization and avoiding the opposite direction, which can adversely affect production efficiency, lead to adverse environmental and socio-economic consequences; the main means of agricultural production is land, the use of which as a natural resource and national wealth should be based on scientifically based farming systems. Also, agricultural products, as a rule, are characterized by a short shelf life; for objective reasons, industrial production has a higher degree of monopolization as compared with agricultural production in the conditions of market relations, therefore, without state regulation, price disparity and infringement of the economic interests of rural producers are inevitable.

Based on the analysis of global experience in the development of small and medium-sized enterprises, it can be stated that special attention is currently being paid to cooperation in the small and medium-sized business system, as well as the modernization of the material and technical resources, which ultimately improves the efficiency of the agro-industrial complex in general. As noted in the article, [1] small and medium-sized enterprises have a serious impact on the economic situation of the State. In particular, in the agrarian economy, small and medium-sized enterprises provide 50-80% of employment. It is known, that in the Russian Federation the volumes of agricultural products, produced in peasant farms and households, make up about half of the industry's output. In addition to agricultural production, for the population of rural areas, small agribusiness provides employment, performs village-forming functions, contributes to the development of local budgets, ensures the preservation of land resources from degradation. The proportion of peasant farms, including individual entrepreneurs, in the production of agricultural products is constantly increasing. Thus, the share of products produced in peasant farms, including individual entrepreneurs, in 2013 amounted to 9.8% of the total production, and in 2017 to 12.7%.

The growth rate of production in peasant farms, including individual entrepreneurs, is ahead of the growth rate of production in agricultural organizations. According to preliminary data from Rosstat, in 2017, the index of agricultural production in peasant farms, including individual entrepreneurs, was 111.1% (including 112.3% in crop production and 106.2% in livestock), while the agricultural products production index in agricultural organizations in 2017 was 105.2%. Small and medium-sized business takes a certain place in the economy of the country. The dynamics of the quantitative changes in small and medium-sized enterprises and their sectoral structure in recent years are presented in Table 1. According to the data in Table 1, in the period 1996-1997 there was a slight decrease in the number of small enterprises in the territory of the Russian Federation, however, in 1998 this decline almost stopped. On January 1, 2015, in Russia, 5117,5 thousand small and medium-sized enterprises were active (compared with their number on January 1, 2014, the increase was only 591.3 thousand of small enterprises, or 13.1%). It should also be noted, that during the observed period, there was a steady growth in the number of enterprises in such sectors as health care, physical culture and social security (by 32.7% in 2013, by 13.6% in 2014), real estate operations (by 23.2% and by 22.6%, respectively), trading and food services (by 4.5% and

3.3%). At the same time, the number of small and medium-sized enterprises operating in the "science and scientific services" sector continued to decrease (by 7.3% and by 12.4%, respectively). The analysis showed that the sectoral structure of small and medium-sized businesses is changing: the share of trading and food service enterprises is increasing and the share of construction organizations, enterprises engaged in general commercial activities for the market, science and scientific services enterprises are decreasing.

Table 1. Distribution of small enterprises of the Russian Federation according to the economic sectors in 1996 - 2014 (thousand units at the end of the year in % of the total number of SMEs).

Enterprises	1.01.1996		1.01.1997		1.01.2014		1.01.2015	
	Quantity	**%**	**Quantity**	**%**	**Quantity**	**%**	**Quantity**	**%**
Total	877,3	100	828,0	100	4526,2	100	5117,5	100
Including:								
Industrial	128,5	14,65	129,3	15,62	774,0	17,1	885,3	17,3
Construction	145,5	16,58	137,0	16,54	779,0	17,2	875,1	17,1
Trading and food services	374,6	42,70	353,1	42,65	2045,8	45,2	2333,6	45,6
Commercial	42,4	4,83	35,0	4,23	565,7	12,5	624,3	12,2
Scientific and scientific services	48,8	5,56	46,0	5,55	361,7	8,0	399,2	7,8

In Russia, there are 36.1 thousand agricultural organizations, 24.3 thousand of which are small enterprises, including micro enterprises, 174.8 thousand of peasant farms and individual entrepreneurs, 23.5 mln. citizens keep personal households and other private farms (according to preliminary data of the 2016 All-Russian Agricultural Census). Compared with the data of the All-Russian Agricultural Census in 2006, the number of households and individual entrepreneurs decreased by 38.7%. At the same time, the total area of land used by peasant farms and individual entrepreneurs increased, compared to the 2006 All-Russian Agricultural Census, by 47.5% and reached 43.3 million hectares. The average size of land use by private farms and individual entrepreneurs increased from 103 to 247.8 hectares, that is to say, in 2.4 times. The share of farms in crop production is increasing. Since 2013, there has been an increase in acreage for grain and leguminous crops, and, as a result, an increase in the gross grain harvest. In 2017, compared to 2013, the area for crops at peasant farms and individual entrepreneurs increased by 22.7%, gross yield increased by 73.3%. The sunflower area for grain also increased from 2.4 million hectares in 2013 to 2.8 million hectares in 2017. However, a reduction of 6.2% of the area for vegetable crops was detected and, as a result, a decrease in the production of vegetable products.

Thus, peasant farms gradually become larger, more stable, increasing the production of grain, sunflower, milk, sheep husbandry products. On November 17, 2018 [2] at the summit of the APEC member countries, the main priorities for the development of small and medium businesses were presented, based on mitigating the impact of various risks, taking into account changing technologies and consumer preferences. The

summit made a special emphasis on the need for a strategic modernization of small and medium-sized businesses, as well as improving the sustainability of enterprises in constantly changing economic conditions. Considering the increase in the sustainability of agribusiness enterprises, it becomes obvious that achieving sustainability is possible only through the development of the organizational and economic mechanism of cooperation, which allows reducing risks, based on their diversification. It is also noted [3] that the needs of small and medium-sized businesses in agriculture may vary, depending on the functions they perform in the value chain. For example, enterprises engaged in the cultivation of agricultural products may need financial support for the acquisition of resources. At the same time, processing enterprises require funding at the end of the harvest and the type of support may differ fundamentally. In this regard, it is necessary to develop cooperation, leveling the temporary "breaks" presented above [13]. Let's consider the material and technical resources of the agribusiness subjects as a set of necessary technical means, helping to carry out a continuous production cycle with minimal costs of living and public labor. Technical and technological renewal, labor intensification and resource saving are obligatory indicators of modern state agrarian policy. The ways of reproducing the material and technical resources of agricultural producers are determined alongside internal and external factors, including:

1. the functioning of the national economy in the format of the WTO,
2. availability of the raised funds,
3. dimensions of the organization,
4. financial stability,
5. efficiency of production activity,
6. competitiveness of products,
7. investment activity,
8. the performance of technical equipment,
9. their physical and obsolete depreciation,
10. commitment to innovation.

One of the main factors of stable functioning in the context of globalization is the level of technical equipment of agricultural organizations [1, 2]. According to many economists, one of the main factors hindering the development of Russian agricultural production and increasing its competitiveness on the world market is the technical degradation of the majority of agricultural producers. The quality of the equipment they use leaves much to be desired, and its use has serious drawbacks and requires a network of repair shops and factories. Improving the efficiency of agriculture requires the continuous development of material and technical resources, in other words, the regular introduction of new models of machinery and equipment, mechanization, automation of production and its transformation into a highly developed and highly productive industry. An important condition for the organization of effective agricultural production is the optimal formation and rational use of the agriculture material and technical resources. All elements of the material and technical resources are combined into one or other technological processes through certain forms of the production organization. Among scientists and practitioners, there is a one-sided understanding of the socio-economic functions of cooperation, believing in the denial of profit among cooperatives [5,10,20]. However, the connection of distribution relations with a share contribution (provided

that the payment of dividends depends on profit) creates truly economic incentives for more profitable, highly efficient activities. Profit orientation for cooperatives as market entities is the basis of healthy competition and the identification of competitiveness. Therefore, considering the cooperative movement as an economic activity that does not pursue the goal of profit, is not complete. A cooperative is an enterprise operating on the principles of strict cost accounting, another thing is that the founders manage the income of the cooperative [15]. In this regard, we are invited to define the agricultural cooperative as an organization created by small and medium-sized businesses for profit, meeting the needs of cooperative members in goods, works and services, improving the material and technical resources, as well as other goals in accordance with the cooperative charter. Agricultural consumer cooperatives should be more correctly defined as rural entrepreneurial cooperatives. This definition increases the motivation to create them and justifies the purpose of their functioning.

The disintegration of the majority of rural producers in the early years of market transformations and the emergence on their basis of many small peasant and personal farms, as the main producers of agricultural products, in conditions of weak government support led to a decrease in the efficiency of the industry. From our point of view, for the further development of agriculture in the Russian Federation, aimed at improving the competitiveness of the products on the national and international markets, it is necessary to ensure the material interest of rural producers in cooperation, based on the use of a more advanced organizational and economic mechanism for cooperation and continuous improvement of material and technical resources [6]. This is especially important today in the context of the Eurasian Economic Union creation [11,14]. The material and technical resources of agricultural organizations is a set of technical means that allow to create conditions for the production of agricultural products with the lowest cost of living and public labor. Therefore, the problems of equipping agricultural producers with agricultural machinery and the efficiency of their use are of particular importance. The implementation of the goals of agricultural modernization began with the adoption of the priority national project “Development of the AIC”, which partially overcame the negative trends in the functioning of the industry, some growth in the production of food and agricultural raw materials was outlined. In general, the equipment of agricultural production in Russia with machinery is characterized by negative dynamics. Table 2 presents data on the provision of agricultural organizations with tractors and combines harvesters.

Table 2. Provision of agricultural organizations with tractors and combine harvesters (at the end of the year; thousands of pieces).

Type of machinery	2010	2014	2015	2016	2017	2017 as % over 2010
Tractors, pcs.	310.3	247,3	233,6	223,4	216,8	69,6
Combine harvester-threshers	80.7	64,6	61,4	59,3	57,6	71,3
Forage harvester	1,1	0,7	0,7	0,7	0,7	63,6

Source: Committee on Statistics of the Ministry of Agriculture of the Russian Federation.

As you can see, there is a significant decrease in the number of agricultural equipment, in 2017 in the Russian Federation there were 216.8 thousand units of tractors, which is less than in 2010 by 69.6%. Also, combine harvesters-threshers number in 2017 reduced, compared to 2010, till 71.3% and forage harvesters reduced to 63.6%. Currently, the main focus is on supplying agricultural producers with universal mechanized complexes based on tractor units, which minimizes the costs of agricultural production, effectively carrying out a full cycle of agricultural operations and reducing the payback period of the acquired equipment. All these factors make the agricultural equipment produced by the EAEU undoubtedly competitive on the territory of the EAEU and the CIS countries, and retain its dominant position on the Russian agro-industrial market. Russia is the main producer of agricultural machinery. For example, in Kazakhstan, in the period 2013-2017 there was a trend of steady decline in production of all types of agricultural machinery. In the period from 2013 to 2017, the production of tractors in Kazakhstan decreased 4 times, from 1,362 units to 292 units, respectively. Combine harvesters production number reduced 2 times, compared to 2013. In 2017, the Russian Federation saved the trend for the same production volumes. In particular, according to information provided by the Rosspetsmash Association, by the end of 2017, Russian agricultural machinery factories produced machinery on the total sum of 82.5 billion rubles, which is 24% more than in the same period last year. At the same time (according to Rosstat), the production of combine harvesters in the first nine months of 2017 increased, compared to the same period of 2016 by 19%, and tractors for agriculture and forestry by 5%. (Table 3).

Table 3. Production of agricultural machinery in 2013-2017, pieces.

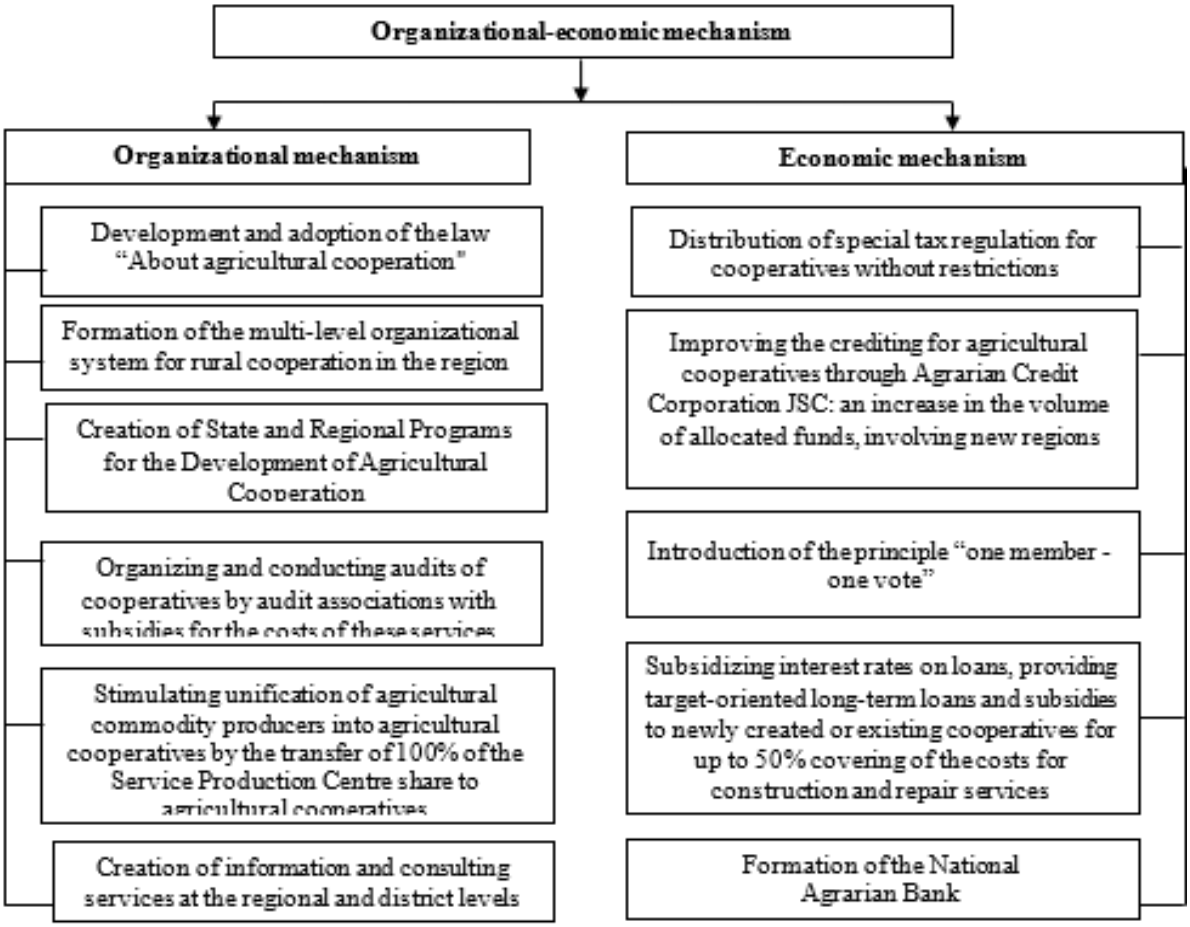
Countries	2013	2014	2015	2016	2017
	Tractors				
Russia	7 590	6 738	5 536	6 400	7 266
Kazakhstan	1 362	1 209	1 227	941	292
Combine harvesters-threshers					
Russia	5 848	5 547	4 412	6 447	7 606
Kazakhstan	524	491	489	544	210

Source: Joint forecasts of the agro-industrial complex development for 2016-2017.

Currently, in the Russian Federation there are more than 10 large enterprises, specializing in the assembly of agricultural equipment from vehicle sets manufactured by Belarusian enterprises of agricultural engineering (PO "Minsk Tractor PO "Gomselmash"). The main ones are the "Sareks" company and the industrial association "Alabuga Automobile Plant", specializing in the assembly of agricultural vehicle sets of the RUP "Minsk Tractor Plant". A major player in the grain and fodder harvesters' market is the Russian-Belarusian joint venture "Bryanskselmash". Its share in the market of combine harvesters in Russia is 28%. In the Republic of Kazakhstan, production of final types of agricultural machinery has been established: combine harvesters, agricultural tractors, balers, seeders, and to a large extent this is an assembly production of leading agricultural machinery manufacturers: RUP "Minsk Tractor Plant", "Gomselmash" (Republic of Belarus), OAO "Rostselmash" and ZAO "Saint-Petersburg Tractor Plant" (Russia). Thus, there are two main ways for solving issues of technical support for agricultural producers: the supply of new equipment, the quality repair of existing ones and the maintenance of

accessible conditions. With the development and change of economic conditions in the country and the world, it is required to make adjustments to the principles of the organization and functioning of cooperatives [7]. In the twentieth century, the result of these changes was the revision of the ICA system of principles and the formulation of six main ones in 1966: voluntary participation; governance democracy; a fixed share of each member of the cooperative in the authorized capital; income distribution in accordance with the decision of the general meeting of members of the cooperative; active social policy; cooperation with other cooperatives [19]. The main proposals for improving the organizational-economic mechanism for the development of cooperation in agriculture are represented in Figure 1.

Figure 2. Directions for improving the organizational-economic mechanism for the development of cooperation in agriculture.



Source: developed by the author.

To the main organizational measures we attributed: the formation of an organizational system of multi-level rural cooperation in the region; organizing and conducting audits of cooperatives by audit associations with subsidies for the costs of these services; stimulating unification of agricultural commodity producers into agricultural cooperatives by the transfer of 100% of the Service Production Centre share to agricultural cooperatives; creation of information and consulting services at the

regional and district levels. As the main economic tools for improving the mechanism for the development of cooperation in agriculture, we have proposed: the creation of state and regional programs for the development of agricultural cooperation; distribution of special tax regulation for cooperatives without restrictions; improving the crediting for agricultural cooperatives through Agrarian Credit Corporation JSC; introduction of the principle "one member - one vote"; subsidizing interest rates on loans, providing target-oriented long-term loans to newly created or existing cooperatives.

RESULTS

On the basis of the survey, it became possible to determine the range of needed services for the maintenance of the peasant farms activities. In the first place was the need for credit, information and consulting services (80%). In the districts of the region, a credit system is being developed through the creation and operation of credit partnerships. But unlike credit cooperation, which should operate on the principle of non-profit mode, credit partnerships are commercial organizations. Today, the system of credit partnerships is not enough to solve the issue of affordable loans. Therefore, we consider it necessary to develop an inter-farm credit cooperation and cooperative consulting centres. It should also be noted that the main systemic problems of agricultural engineering are: low operational efficiency of the sector; low investment in research and development; limited export supplies and, as a result, dependence on the local market situation; low financial responsibility of agricultural enterprises. But the strengthening of the material and technical resources of agricultural production is a complex issue that includes both technical and technological modernization, the provision of financial resources, scientific support, without these components the dynamic and progressive development of agriculture is impossible. The main advantages of improving the material and technical resources and cooperation in the field of agribusiness are represented in the Figure 3. In order to develop inter-farm cooperation and disseminate the experience of cooperating agricultural producers, it is necessary to create an information and advisory service at the regional and district levels. To identify factors hindering the cooperation of agricultural producers, a survey was conducted among representatives of peasant farms. The questionnaire also proposed to rank the motives for creating an inter-farm cooperative. The results of the survey show that the frequently encountered motives for creating rural inter-farm cooperatives can be arranged in accordance with the rank of repeatability in the following order: government support for creating agricultural production cooperatives; the presence of a perfect legal framework; low costs for various services; the possibility of using expensive modern technology; solving sales problems; providing equal opportunity to enter the market. 40 respondents participated in the survey, including heads of peasant farms and agricultural organizations. From the total number of respondents, only 2% have experience in the cooperative system, a less more than a quarter of farmers (24%) know the purpose of agricultural consumer cooperation as an economic phenomenon aimed at maintaining and developing production activities. For individual farmers, the constraining factors of participation in inter-farm cooperatives is the lack of information on how to create cooperatives, the lack of qualified mid-level personnel, the difference in vital needs.

Figure 3. Directions for increasing the efficiency of the agro-industrial complex on the basis of cooperation and the material and technical resources improving.

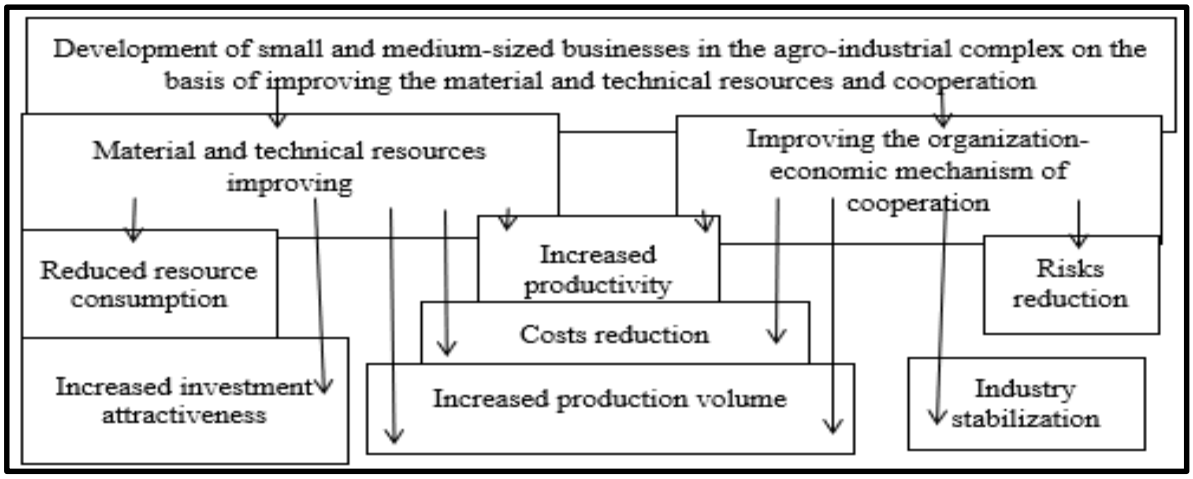


Table 4. Provisions for increasing the credit cooperatives interest in the timely repayment of credit resources.

Options for repayment of received credit resources	**Proposed incentive options for users of credit resources**
Credit resources repayed before the deadline	The interest rate for the use of credit resources is reduced by 10-20% (the established credit rate is taken as 100%)
Credit resources repayed on time	The interest rate for the use of credit resources is reduced by 5-10%
Credit resources repayed out-of-time	The interest rate for the use of credit increases by 5-10% (the established credit rate is taken as 100%)

Source: compiled by the author.

In general, it can be said that small-scale agricultural commodity producers understand the need for unification, but due to psychological factors, they do not dare to join cooperatives. Despite the fact that a number of government measures have been set to support agricultural cooperation, all respondents are wary of cooperation. At present, the increase in the efficiency of consumer cooperation is largely due to the strengthening of the shareholders' role in it. Therefore, the most "urgent problem is the strengthening of organizational work with shareholders." We propose the following measures to increase the interest of credit cooperatives in the timely repayment of credit resources: various incentive options for users, depending on the conditions of the received credit resources repayment (Table 4).

CONCLUSION

So, if loans are repaid before the deadline, the interest rate (the current rate is taken as 100%) decreases by 10-20% and with a timely repayment - by 5-10%. And, on the contrary, when credit resources are repaid out-of-time, the interest rate can be

increased by 5-10%. Analysis of the current trends in the development of the leading agrarian countries showed that the further development of the agro-industrial complex of the region should focus on improving the competitiveness of agricultural products by increasing the efficiency of state support and creating equal favorable conditions for the development of agribusiness. Thus, despite the growth in production volumes in various sectors of agriculture, the provision of domestic agribusiness with the necessary equipment is far from optimal values, this reduces the competitiveness of agricultural enterprises. That is why the main condition for the dynamic development of agriculture is the strengthening and renewal of the material and technical base of agricultural production.

REFERENCES

1. Alison Eskesen, Shujog rashi Agrawal, Shujog Noopur Desai (2011). Small and medium enterprises in agriculture value chain. Retrieved from: https://iixfoundation.org/wp-content/uploads/2011/08/OXFAM-SME-Report-November-2014_FINAL.pdf.
2. APEC Builds Disruption-Ready Small Business Trade (2018). Retrieved from: https://www.apec.org/Press/News-Releases/2018/0917_SME.
3. Birkelund, John, P. (2001) "Doing Well While Doing Well: The Successful American Enterprise Funds." Foreign Affairs. Retrieved from: https://www.foreignaffairs.com/articles/2001-09-01/doing-good-while-doing-well-unheralded-success-american-enterprise-funds.
4. Zinchenko, A.P. (2009) Material and technical base of agriculture. Economics of Agricultural and Processing Enterprises, 5, 8-12.
5. The strategy for the development of agricultural engineering in Russia for the period until 2030 (2017), 1455-p, 4-6. National report "On the progress and results of implementation in 2016 of the State Program for the development of agriculture and market regulation in agricultural products, raw materials and food for 2013-2020".
6. Chekavinsky, A.N. (2009) Material and technical base-efficiency of agriculture. Regional economy: problems and development prospects, 1(47), 41-50.
7. Ushachev, I.G. (2008) Scientific support of the State program for the development of agriculture and regulation of the markets for agricultural products, raw materials and food for 2008-2012. Economics of agricultural and processing enterprises, 6, 1-9. Analysis of the production (localization) of agricultural machinery in the Eurasian Economic Union by type of production (2017). Moscow. Retrieved from: http: //www.eurasiancommission.org/ru/act/prom_i_agroprom/dep_agroprom/monitoring /Documents/Analysis of the localization of agricultural equipment in the EAEU.pdf.
8. Ayazhanov, K.S. Assessment of the economic development factors: problems and features. Retrieved from: http://www.group-global.org/, 26.03.2014.
9. State program for the development of agriculture and regulation of agricultural products, raw materials and food for 2013-2020. (2012). Moscow.The strategy for the development of agricultural engineering in Russia for the period until 2030. (2017), 1455-p, 4-6.

10. Saltyk, I.P., Zyukin, D.A. (2011) Development of the material and technical resources of the grain production subcomplex. Regional economy: theory and practice, 41(224), 14.
11. Nazarbayev, N.A. Eurasian Economic Union: theory or reality. Retrieved from: http://www.minplan.gov.kz/pressservice/77/5147/, 03.19.2014.
12. Kuryakov, I. A., Metelev, S.E. (2008) Fundamentals of economics, organization and management of agricultural production. Study guide, p. 501. Omsk.
13. Polukhin, A.A. (2014) Organizational and economic mechanism of the agriculture technical modernization. Dissertation for the degree of Doctor of Economic Sciences, p. 50. Moscow.
14. Prushchak, O.V. (2016) Strategic priorities for sustainable development of regional agriculture. Bulletin of the Saratov State Socio-Economic University, 5(64), 42-47.
15. World Economic Forum. The Global Competitiveness Report 2013-2014 (2014). Retrieved from: http://reports.weforum.org/the-global-competitivenessreport-2013-2014/.
16. Grudneva, A.A. Development problems of small and medium-sized businesses in the field of agriculture.
17. Vysotskaya, T.R. (2015) Improving the mechanism for managing the development of small and medium-sized businesses in the Arkhangelsk region. Modern science: actual problems and ways to solve them, 4(17), 110–114.
18. Cao, Q.S., Yan, Z.W., Chu, F., Tang, Y.B. (2010) The current situation and development of agricultural clusters in China. Jiangsu Agricultural Sciences, 6, 608-610.
19. Galvez-Nogales, E. (2010) Agro-based clusters in developing countries: global competitive economy. Food and Agriculture Organization of the United Nations, Rome. Retrieved from: http://www.fao.org/docrep/012/i1560e/i1560e.pdf.