



FORMS OF INTERSECTORAL INTEGRATION IN AGRICULTURE

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Annotation. The process of intersectoral integration is facilitated by the development of strategies for the changing economic environment to increase the stability of integrated structures. The nature of integration processes is determined by the features of product subcomplexes, the conditions of commodity markets, the economic behavior of producers, regional and other factors. In the implementation of the algorithm for selecting an effective form of integrated formation, the rationale for an effective integration mechanism becomes important. Economic relations arising from the restructuring of individual industries by creating a range of vertically integrated structures that can become the basis for the stable functioning of the country's agricultural sector are becoming relevant. Reasons for joining include: increasing market competition; motives for reducing production costs and risks, implementing a common sales strategy in marketing, purchasing, advertising, and expanding sales markets; attracting investment; and the need for financial recovery of production.

Keywords: intersectoral integration, agro-industrial complex, communications, interaction, integrated structures, enterprises, factors, methods, methodology, grain market, resources, holding, The Republic of Kazakhstan

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1. Introduction

The most important direction for improving the efficiency of agricultural enterprises is the development of intersectoral agricultural integration, integration relations at a qualitatively new level and the formation of integrated structures. In the process of integration, strategies are developed to adapt to the changing economic environment in order to survive and increase the stability of integrated structures. Features of product subcomplexes, conditions of commodity markets, economic behavior of producers, regional and other factors determine the nature of integration processes (Ushachev et al., 2018; Ushachev, 2015; Monni et al., 2017; Bublîenè et al., 2019; Petrenko et al., 2019; Akhmadeev et al., 2019; Havierníková, Kordoš, 2019; El Idrissi et al., 2020).

The rationale for an effective integration mechanism involves the implementation of an algorithm for selecting an effective form of integrated formation; at the first stage of which, the analysis of factors that affect the effectiveness of integration processes (including such uncontrolled factors as the macroeconomic situation, soil and climate conditions, political factors), as well as a comprehensive analysis of the commodity and financial markets to assess the competitive advantages of the integration chain and its individual links and the choice of effective competitive strategies is carried out.

The second stage provides for the selection of specific integration options based on the Bank of integration forms and mechanisms, which should be created on the basis of generalization of the experience of integration of

industrial, agricultural, trade and financial capital in Kazakhstan and economically developed countries. At the third stage, alternative integration options are evaluated. In General, due to integration, the efficiency of the enterprise without large investments of additional funds can increase in the first year of operation in the new conditions by 30-60% only by activating internal capabilities and taking into account the external environment. At the same time, several integration options can be used, which are most suitable for each specific enterprise.

The final choice of direction can be made based on the results of a SWOT analysis of integration options for various types of business associations. Currently, economic relations that arise on the basis of the restructuring of individual industries by creating a wide range of different vertically integrated structures that can become the basis for a stable revival of the agricultural sector are becoming relevant (Altukhov, 2014).

The main reasons that force enterprises to join are: increased market competition; the desire to reduce production support; reducing risks, dangers and threats, including by diversifying activities; centralizing the implementation of the overall sales strategy (marketing, purchasing, advertising, sales, obtaining trademarks, etc.); improving production efficiency; expanding sales markets; attracting investment; the need for financial recovery of production.

2. Methods of research

The development of intersectoral integration between agricultural and processing enterprises requires a set of interrelated organizational and economic methods of influencing the interests of all parties. When forming these methods of influence, economic relations should be oriented towards achieving the following goals: solving the problem of equivalence of exchange; achieving consistency of interests; ensuring proportionality and rhythm of joint production.

As a result, strategic goals are formed, the most important of which are: improving the management of financial flows; obtaining new sources of financing for expanded reproduction; improving the technology and efficiency of its own production, its focus on the active promotion of goods and services to the external and internal markets; connecting to the trade turnover with the external market not only individual enterprises, but also entire production and technological chains. (Dobrovolskienė, 2017).

3. The discussion of the results

The economic basis for integration in the agro-industrial complex should be a balance of interests of participants in the technological process. Intersectoral imbalance is most pronounced in the structure of the price of final products (Charykova, Latynin, 2015).

In modern economic conditions, the situation is such that the share of direct agricultural producers in the retail price of food products is significantly underestimated. The calculation of the share of grain prices in the cost of final products in the regions shows that the economic interests of agricultural producers are affected both at the stage of flour production and at the stage of bread and bakery products production. The share of the cost of flour in the price of bread is 37%, grain - from 15% to 22%.

A similar trend in the distribution of the share of the price of raw materials in the final product can be traced in the analysis of the price structure of livestock products. Therefore, one of the main problems of the current stage of development of the agro-industrial complex is the industry balance of prices along the vertical chain.

The calculations made to justify the standard costs of agricultural production are the basis for the supply of prices on the market and price relationships in the reproductive chain: production – processing – sale (Tokhayeva et al.,

2020). The forecast sales prices for bread and bakery products, milk and dairy products, meat and meat products were calculated taking into account the growth of purchasing power and real income of the population. In the distribution of revenue from the sale of final products in proportion to the average cost of production in the meat subcomplex, the share of agricultural producers in the retail price will be 68-70%, processing enterprises-20-21%, trade-10-11%; in the dairy subcomplex-73-74, 17-19, 8-9%; in grain products-58-54, 37-42, 5-6%.

The calculation of economic indicators of production and sale of agricultural products in the conditions of integration of agricultural and processing enterprises has shown that the highest level of efficiency is achieved when implementing measures aimed at optimizing internal and external factors, economic relations in the agro-industrial complex (Kantureyev, 2019).

Thus, agro-industrial integration – this is a natural economic phenomenon of the objective process that contributes to the stabilization, efficiency improvement and sustainable development of producers of agricultural products, raw materials and food. The strategy for developing agro-industrial integration should be focused on creating vertically integrated structures with a closed technological cycle that are more stable and stable (Mizanbekova et al., 2020). This is facilitated by saving transaction costs and resources by expanding the scale of production, ensuring the sale of agricultural products within an integrated structure, the ability to centralize resources and direct them to the highest priority production, overcoming local monopolism and forcing intermediaries out of circulation, increasing the interest of processors in the development of the raw material base, and simplifying procedures for coordinating the interests of integration participants (Mizanbekova et al., 2019).

The strategy for the development of integration processes in the agro-industrial complex makes it possible to separate a number of conceptual provisions: the most important catalyst for integration and its right point is the creation of a strong "core"- the integration center.

Its role is most successfully performed by enterprises of the food and processing industry, through which all cash flows pass:

- as "points of growth" – structural units of the "core" of integration should be economically stable farms that take "under their wing" weak agricultural enterprises;
- the most effective models of integration are agricultural formations, relations in which are built between legally independent agricultural enterprises on a contractual basis, and structures formed by administrative and economic Association of farms;
- the main organizational form of most integrated associations is an active society;
- vertical integration prevails, implemented through the creation of industrial product subcomplexes, which include enterprises for the production, processing and sale of agricultural products;
- horizontal integration continues to develop – through the establishment of intersectoral territorial structures;
- aktiviziruyutsya the process of complication of the organizational-economic forms of integration, which created a diversified combination systems combining vertical and horizontal levels; increasing participation in the integration processes of the state, which invests budgets to the funding sources agromyziy (Sharipov, Kantureev, 2018).

The structure of the grain subcomplex is determined by the industries that provide grain production in agriculture, procurement and storage. The subcomplex also includes the industries that provide it with the means of production and the corresponding production infrastructure.

The grain subcomplex is associated with a number of agricultural industries that produce other types of products that use grain raw materials – brewing, alcohol, and starch.

The main link around which all divisions of the subcomplex are formed is agriculture, which provides the production of grain resources.

On average, soft wheat in Kazakhstan has been marked by a trend that has formed in recent years to reduce the acreage with a relatively unchanged yield, although it decreased in 2019 to the level of 9 C/ha on average. The total production volume for soft wheat was 10.4 million tons (fig.1).

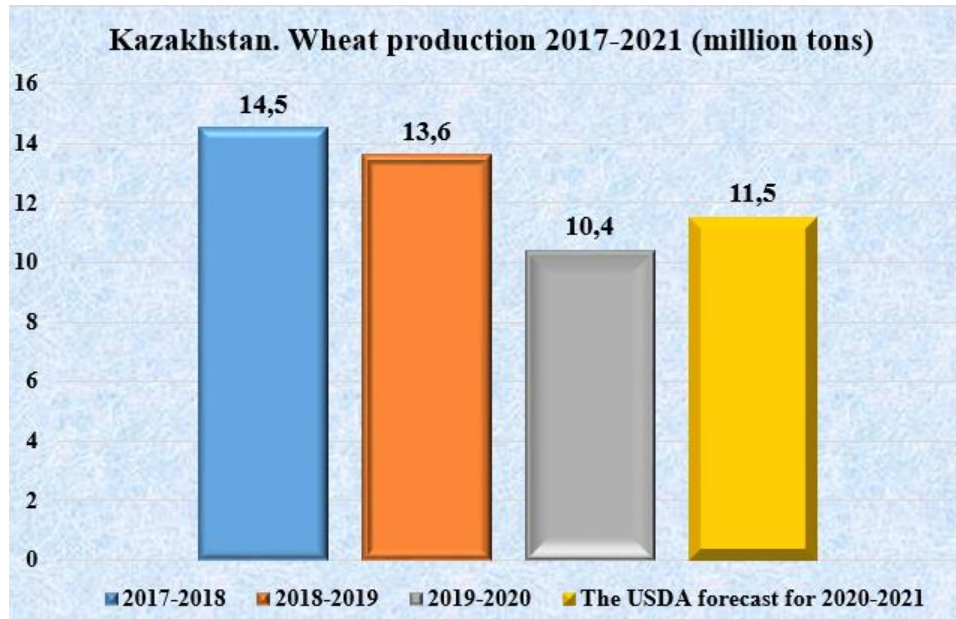


Figure 1. Wheat production in Kazakhstan (Umbetaliev et al., 2018)

Exports of soft wheat in the 2019/2020 season will decrease by 21% compared to the previous season and will amount to 4.8 million tons, and the export of flour will be halved to the level of 1.24 million tons (in grain equivalent). There is a major decrease in exports due to Uzbekistan, which has been the main importer of Kazakh wheat in the past 5-7 years, but this season is projected to reduce imports by about 1 million tons, which is mainly due to the high yield in this country, as well as a decrease in the volume of quality wheat in the Kazakh market. Acreage for durum wheat in 2019 was reduced by 10% to 430 thousand hectares, due to the fact that prices in the 2018-2019 season were lower than in previous seasons and the market switched to more marginal crops. With a reduced average yield of about 13 C / ha, production is estimated at 560 thousand tons, which is 23% less than in 2018.

The basis for establishing optimal proportions between the branches of the grain subcomplex and the pace of development of each of its branches is the volume and structure of national economic demand for products.

The effectiveness of clusters depends on the level of development of inter-industry integration, inter-industry relations, forms of interaction of enterprises that are part of this Association, and mutually beneficial economic relations between partners. At the same time, it is necessary to take into account the specific features, as well as the existing resource, labor, and financial potential of each industry (Alimkulova, 2018.).

On the basis of the above approach, the main factors determining the choice of the method of interaction of enterprises in the functioning of clusters, the main principles of intersectoral integration, improvement of economic relations of agricultural enterprises are determined (fig.2).

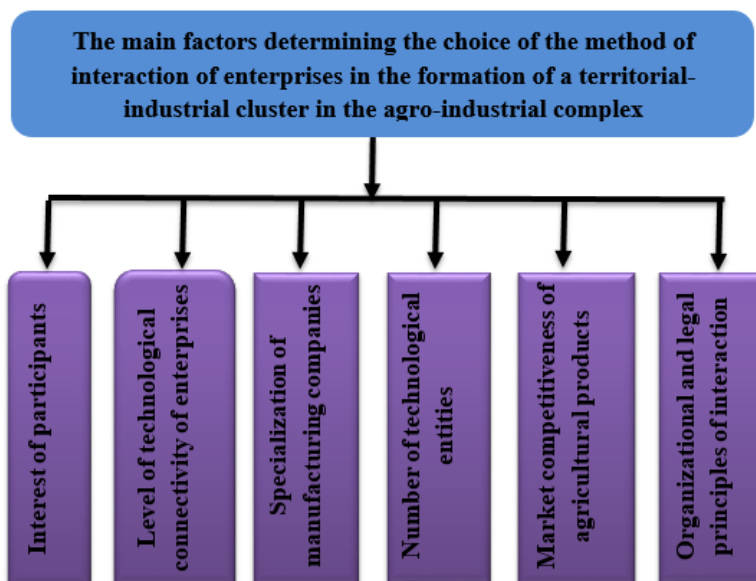


Figure 2. Main factors of interaction of enterprises in the formation of clusters in the agro-industrial complex

Appropriate regulatory mechanisms are used to regulate the relationships of cluster members, ensure their common interests, coordinate individual and corporate goals, and regulate internal assortment, resource, price, and other proportions (Semin, 2019).

The priority directions of development of the cluster system in the agro-industrial complex of Kazakhstan are to increase the competitive advantages of:

- producers of agricultural raw materials by providing favorable economic conditions for their cultivation, stimulating producers in the growth of agricultural production, providing them with basic means of production (seeds, agricultural machinery, fertilizers, fuel, etc.), the development of large and medium-sized farms along with improving the production and economic activities of households;
- enterprises of the system for processing agricultural raw materials by modernizing them, providing them with high-tech, resource-saving equipment, developing waste-free production, deep, complex processing of raw materials;
- enterprises of the system of procurement, storage, transportation, packaging and marketing of agricultural raw materials and finished products by developing alternative forms of purchase and sale, primary and deep processing of agricultural products, improving the wholesale and retail network, using effective methods of product storage, etc.;
- development of inter-industry integrated links between agricultural enterprises in the process of promoting products from the manufacturer to the consumer along the technological chain "production-purchase-storage-processing - transportation - packaging-sale" on the basis of mutual benefit, mutual interest of the parties.

Appropriate regulatory mechanisms should be used to regulate the relationships of cluster members, ensure their common interests, coordinate individual and corporate goals, and regulate internal assortment, resource, price and other proportions (Razminienė, Tvaronavičienė, 2018).

One of the most effective forms of intersectoral integration, as shown by world practice and existing domestic experience, is the formation of agro-industrial holding structures that combine agricultural production and enterprises, those that supply resources for agriculture and process its products, as well as enterprises that sell manufactured products (Petrikov A., 2018).

Achieving the main objective of agricultural holding formations, which is to increase food production and improve the efficiency of their operation, can be achieved, first of all, by improving the relationship between their constituent enterprises, taking into account the economic interests of all participants in integration, creating conditions for productive work of employees of enterprises (Sidorenko, 2015, Tireuov 2016).

Single grain holding was created on the principles of voluntary and equitable Association of the participants of the grain market maintaining their legal and economic independence to achieve the following common goals: increasing access to financing spring sowing and harvesting for the rural producers, but also guaranteed sale of grain in autumn period at the market price; sale of grain and subsequent distribution among the grain producers - participants of the Contract of the net profits from the activities of the Corporation; creation and development of grain storage and export transshipment infrastructure (Tireuov et al., 2018).

The agreement on joint activities within the framework of the Unified grain holding (EZ) was signed between JSC "national company "food Corporation" (a subsidiary of "KazAgro") and the Union of farmers of Kazakhstan. The ECC was created to expand producers' access to financing for spring field and harvest operations, guaranteed grain sales in the autumn period at market prices, grain sales and subsequent distribution among grain producers – participants of the holding of part of the net profit from the activities of the "food Corporation", the creation and development of infrastructure for storage and export transshipment of grain. 56 participants joined the Unified grain holding of the Republic of Kazakhstan: 36-from the Akmola region, 14 - from Kostanay, 5-from North Kazakhstan and one from Pavlodar regions, representing small and medium-sized farms with a sown area of 200 to 20 thousand hectares. This innovation was implemented through a voluntary Association of grain market participants in the form of a consortium based on JSC "NC "food Corporation". The national company has terminals, elevators, experience and personnel. The creation of a single grain holding United Kazakhstan farmers, exporters-traders, millers, transport workers, agricultural machinery manufacturers, elevators in one consortium. The main goal of which is to sell the General product profitably and get the maximum profit. At the same time, the consortium members will fully retain their legal independence.

Integrated structures of the holding type represent a complete form of integration that has stricter links. (Tvaronavičienė, 2018). They are widespread in various sectors of the agro-industrial complex of Kazakhstan: in grain (grain companies). Currently, there are about 40 large grain companies operating in the country, which own the majority of procurement and processing enterprises: grain receiving enterprises, elevators, flour mills, bakeries, etc.

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he grain Union of Kazakhstan has more than 80 elevators with a total capacity of 10.2 million tons, 26 mills for 300 thousand tons per year and 21 bakeries with 500 tons of products per day. Grain companies are the main business entities of grain farming, their business model pursuing: owners of property shares and land shares merged into production cooperatives, limited partnership, joint stock company, LLP, etc., developing in economy, the processing industry produced goods and organizing its implementation; many of them are large, integrated enterprises.

For this type of integrated 15-20% of farms of different management forms in the country: Akmola region: production cooperative (PC) "Rodina", a production cooperative(PC)"Izhevsk" PC "Michael", too "Free" in North Kazakhstan – commandite partnership(CT) "Zinchenko& K" etc.

One of the forms of intersectoral integration was formed as a result of the sale and transfer of agricultural enterprises under the management of investors.

Currently, such companies control 2/3 of the grain area in the North of the Republic. The advantages of this form of integration are: combining three areas of the agro-industrial complex and ensuring a complete technological cycle of reproduction, which allows you to restore the destroyed economic ties, establish logistics and sales of products.

They are competitive in the domestic and foreign grain markets; integrator investors serve as a guarantor to banks for obtaining loans to farms, which allows agricultural formations to maintain their integrity and avoid bankruptcy; elevators and HPP, flour mills are stably provided with agricultural raw materials and rhythmic work, oil depots and agricultural processing enterprises are able to provide themselves with fuel and lubricants, machinery, spare parts, chemicals in large quantities at wholesale prices and sell to agricultural enterprises at the minimum market price, have the opportunity to use the services of an agricultural service without intermediaries.

It should also be noted the negative factors of the functioning of large integrated structures in the form of grain companies: agricultural formations, farmers lost their property shares and land shares, the right to produce and income, and thus turned from owners-owners to employees; the conditions of cooperation are not met, in which each participant must receive a share in the final product; the parent company (the owner and its owners) - the founders of the LLP further strengthen the position of the monopolist, where prices and all surplus product created by all areas of the agro-industrial complex from production to sale are controlled. Their interest in increasing income from wheat production and not investing in the development of agricultural production, production and social infrastructure.

Conclusions

Assessing the current state of development of intersectoral integration in the agro-industrial complex of Kazakhstan, it should be noted significant trends: a variety of forms of integration, including public-private partnerships, increased state support for the development of agricultural cooperation, improving the regulatory framework for integration processes, encouraging the Association of agricultural producers with enterprises of storage, processing and marketing of agricultural products, infrastructure development in the process of product promotion to the consumer using cluster and logistics methods etc Activation of state measures for the development of agricultural cooperation and intersectoral integration, improvement of the regulatory and tax base will provide integrated formations with self-financing, the ability to invest their own funds, and increase the interest of integrator firms in obtaining the final product.

References

- Akhmadeev, R., Redkin, A., Glubokova, N., Bykanova, O., Malakhova, L., Rogov, A. 2019. Agro-industrial cluster: supporting the food security of the developing market economy. *Entrepreneurship and Sustainability Issues*, 7(2), 1149-1170. [http://doi.org/10.9770/jesi.2019.7.1\(25\)](http://doi.org/10.9770/jesi.2019.7.1(25))
- Alimkulova, E.S. 2018. Cluster development of agriculture as a factor of food security. *The Agricultural Market Issues*, 3, 173–17
- Altukhov, A.I. 2014. Development of the grain product subcomplex of Russia. *Krasnodar-Kubgau-EDVI*, 662 p.
- Altukhov, A.I., Nechaev, V.I. 2015. Economic problems of innovative development of grain subcomplex of Russia. M. Nasiriddinova V.V. Publishing House, 477 p.
- Bublienė, R., Vinogradova, I., Tvaronavičienė, M., Monni, S. 2019. Legal form determination for the development of clusters' activities. *Insights into Regional Development*, 1(3), 244-258. [https://doi.org/10.9770/ird.2019.1.3\(5\)](https://doi.org/10.9770/ird.2019.1.3(5))

- Charykova, O.G., Latynin, D.S. 2015. Development of grain market infrastructure is an important condition for the implementation of Russia's export potential. *Modern Economy: Problems and Solutions*, 4 (64), 138-144. <https://doi.org/10.17308/meps.2015.4/1229>
- Dobrovolskienė, N., Tvaronavičienė, M., Тамошюниене, p. 2017. Implementation of sustainable development projects: an example from Lithuania, *Entrepreneurship and Sustainable Development Issues*, 4(4), 477-488. [https://doi.org/10.9770/jesi.2017.4.4\(6\)](https://doi.org/10.9770/jesi.2017.4.4(6))
- El Idrissi, N. E. A., Ilham Zerrouk, I., Zirari, N., Monni, S. 2020. Comparative study between two innovative clusters in Morocco and Italy. *Insights into Regional Development*, 2(1), 400-417. [http://doi.org/10.9770/IRD.2020.2.1\(1\)](http://doi.org/10.9770/IRD.2020.2.1(1))
- Havierníková, K., Kordoš, M. 2019. Selected risks perceived by SMEs related to sustainable entrepreneurship in case of engagement into cluster cooperation. *Entrepreneurship and Sustainability Issues*, 6(4), 1680-1693. [http://doi.org/10.9770/jesi.2019.6.4\(9\)](http://doi.org/10.9770/jesi.2019.6.4(9))
- Kantureyev, M.T., Sigarev, M.I. 2019. Public support of small businesses in Kazakhstan. *News of the national academy of sciences of the Republic of Kazakhstan. Series of agricultural sciences*, 1(49), 16-20. <https://doi.org/10.32014/2018.224-526X.2>
- Mizanbekova, S, Tvaronavičienė, M, Rakhimzhanova, G. 2020. Information technologies in grain market infrastructure operations. *News of the national academy of sciences of the Republic of Kazakhstan. Series of agricultural sciences*, 55, 10-16. <https://doi.org/10.32014/2020.2224-526X>
- Mizanbekova, S., Kalykova, B.B., Nurmanbekova, G.K. 2019. The competitiveness of Kazakh grain on the domestic and foreign grain markets. *Problems of Agricultural Market.*, 3, 112-118.
- Monni, S., Palumbo, Tvaronavičienė, M. 2017. Cluster performance: an attempt to evaluate the Lithuanian case. *Entrepreneurship and Sustainability Issues*, 5(1), 43-57. [http://doi.org/10.9770/jesi.2017.5.1\(4\)](http://doi.org/10.9770/jesi.2017.5.1(4))
- Petrenko, Y., Vechkinzova, E., Antonov, V. 2019. Transition from the industrial clusters to the smart specialization of the regions in Kazakhstan, *Insights into Regional Development* 1(2): 118-128. [https://doi.org/10.9770/ird.2019.1.2\(3\)](https://doi.org/10.9770/ird.2019.1.2(3))
- Petrikov, A. 2018. Use of innovative technologies by various categories of farms and improvement of scientific and technological policy in agriculture. *Agro-Industrial Complex: Economics, Management*, 9, 4-11.
- Razminienė, K., Tvaronavičienė, M. 2018. Detecting the linkages between clusters and circular economy. *Terra Economicus*, 16(4), 50-65. <https://doi.org/10.23683/2073-6606-2018-16-4-50-65>
- Semin, A.N. 2019. Priority directions of agro-economic research of scientific and technological development of agro-industrial complex of Russia. *Economics of Agricultural And Processing Enterprises*, 1, 2-6.
- Sharipov, A. K., Kantureev, M. T. 2018. Industrial and innovative mechanism of development of Agro-industrial complex of Kazakhstan. *Problems of the Agricultural Market*, 3, 17-22
- Sidorenko, O.V. 2015. Conceptual approach to the assessment of grain products subcomplex development in the open economy. *Agricultural Russia*, 1, 35 -38. <https://doi.org/10.15217/48484>
- Tireuov, K., Mizanbekova, S., Kalykova, B., Nurmanbekova, G. 2018. Towards food security and sustainable development through enhancing efficiency of grain industry. *Entrepreneurship and Sustainability Issues*, 6(1), 446-455. [https://doi.org/10.9770/jesi.2018.6.1\(27\)](https://doi.org/10.9770/jesi.2018.6.1(27))
- Tireuov, K.M. 2016. *Agribusiness in a globalized economy. Monograph. Almaty, 2016, 229 p.*
- Tokhayeva, Z. O., Almukhambetova, B. Z., Keneshbayev, B., Akhmetova, K. 2020. Innovative processes' management in agriculture and food security: development opportunities, *Entrepreneurship and Sustainability Issues*, 7(3), 1565-1579. [https://doi.org/10.9770/jesi.2020.7.3\(10\)](https://doi.org/10.9770/jesi.2020.7.3(10))
- Tvaronavičienė, M. 2018. Toward efficient policy making: forecasts of vulnerability to external global threats. *Journal of Security and Sustainability Issues*, 7(3), 591-600. <https://doi.org/10.9770/jssi.2018.7.3>

Umbetaliev, N.A., Abdildin, N.A., Mizanbekov, I.T. 2017. Improving the transport chain of grain production. Izvestiya NAS RK. Series of agrarian Sciences, 6, 260-266.

Ushachev, I. 2015. Strategic approaches to the development of the Russian agro-industrial complex in the context of interstate integration. Agro-industrial complex: Economics and management, 1, 3-5.

Ushachev, I. G., Maslova, V. V., Chekalin, V. S. 2018. State support of agriculture in Russia: problems, ways of their solution. Agro-Industrial Complex: Economy, Management, 3, 4-12.

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