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## EFFICIENCY MANAGEMENT OF THE AGRO-INDUSTRIAL COMPLEX OF THE EAST KAZAKHSTAN REGION BASED ON A CLUSTER APPROACH

*In this article, the authors focus on the agro-industrial complex (AIC). A feature of the East Kazakhstan region is the presence of a favorable climate and conditions for the implementation of agricultural production. The region has a highly developed agro-industrial production and is very attractive for investment. This industry ensures the sustainability of other industries in the region through its integration into large enterprises in Kazakhstan and foreign countries that are engaged in the production of food products.*

*A study of the dynamics of the region's gross output showed the presence of problems with its dynamics, which is associated with the lack of measures to overcome them. The continuation of this trend in the agricultural sector of the East Kazakhstan region may lead to a strong decline in the industry in the next ten years. The result may be an increase in product prices and an increase in the overall food shortage in the region.*

*The study showed that the main reasons that led to a decrease in the share of the agro-industrial complex of the region in the total volume in the country are the following factors: insufficient funding for development and research work in the framework of grant and program-targeted financing, as well as programs to assess the economic effect of agricultural production; institutional problems that have not been resolved so far due to poor control and regulation of the implementation of agricultural sector development programs in the region, although there are huge potential opportunities in the region. Based on the results of the study, 5 regional-scale measures were developed and recommended for implementation, which include, in particular, the introduction of cluster technologies in the agricultural production management system, which will consist of a cluster core and 6 participants: the state, transport and logistics complex, financial sector, electronic marketplace, science and the central authority of the cluster.*

**Keywords:** economic effect, agro-industrial complex, cluster, integration, government regulation, agricultural sector, financing, integrated management, managerial decision, regional product.

**Кілт сөздер:** экономикалық тиімділік, агроөнеркәсіп кешені, кластер, интеграция, мемлекеттік реттеу, аграрлық сала, қаржыландыру, кешенді басқару, басқарушылық шешім, аймақтық өнім.

**Ключевые слова:** экономический эффект, агропромышленный комплекс, кластер, интеграция, государственное регулирование, аграрная сфера, финансирование, комплексное управление, управленческое решение, региональный продукт.

**Introduction.** Any state should provide active support for the development of the agricultural sector, since it is very dependent on this assistance, and it is this industry that ensures the satisfaction of the country's constant demand for agricultural products. This need becomes the reason for studying the main problems to improve the process of managing the efficiency of agricultural production. For example, in 2021 in the East Kazakhstan region (hereinafter referred to as EKR), government agencies allocated funds in the form of subsidies totaling 22.7 billion tenge.

According to information received from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, the total gross output of agriculture, forestry and fisheries of the East Kazakhstan region in 2020 amounted to over 689 billion tenge, in specific weight, this is equal to almost 11% of the country's total production. Despite these figures, the study revealed certain problems in the level of dynamics of the region's gross output and its share in the country's total gross output. This problem is caused by weak management in the management processes of the studied branch of the economy and, if such a negative trend persists, the production of agricultural sector in the region may threaten a significant decline in the next decade.

Thus, the study of agribusiness management processes in East Kazakhstan region can affect the effective development of this industry in the region and increase the share of the region's output in the national volume of production.

**Purpose:** Analysis of the current situation and the study of problems in the dynamics of production volumes and the development of a set of measures to ensure the growth of the efficiency of the agricultural sector at the regional level, using the example of the East Kazakhstan region.

**Methods:** To carry out a comprehensive study, the generally accepted methods for collecting and processing statistical and reporting information were used by comparing, analyzing and summarizing them. The work determines the directions for solving the identified problems in the field of making and implementing managerial decisions in the agricultural sector of the country over the past three years (2018-2020). According to official statistics, the absolute indicators of gross output of the agricultural sector of the East Kazakhstan region (hereinafter referred to as East Kazakhstan region) in 2020 amounted to 689 billion dollars. positive dynamics in the amount of tenge, which is 16.13% and 35.36% higher than in 2019 and 2018, respectively. However, the analysis of comparative indicators of the share of gross production of East Kazakhstan region in the gross national volume amounted to only 10.98% in 2020, while these indicators in 2019 and 2018 amounted to 11.32% and 11.54%, that is, negative growth was 1.9% in 2019 and 4.85% in 2020.

**Literature Review.** There are many studies aimed at studying the essence and significance of the cluster approach, some of them were carried out in the nineteenth century. The very formation of market processes becomes a natural source of clusters. The analysis of specialization and division of labor as the basis for the emergence of clusters has become the object of study of such classics and creators of theories of international trade as A. Smith [1], who pointed out that an enterprise gains a competitive advantage through the division of labor and cooperation, D. Ricardo [2], who substantiated the effectiveness of interstate specialization from the joint location of territories and A. Marshall [3], who characterized the relationship between the joint location of firms and the efficiency of their work.

There are scientific works of such scientists as A. Verber, I. Tyunin, V. Kristaller, who developed models of economic space and determined the interconnection of geographical agglomeration and economies of scale and population settlement [4].

The study of the classical literature related to the concept of a cluster would be incomplete without considering the work of Michael Porter, who was one of the first to reveal the relationship between the creation of clusters and the level of competitiveness of enterprises and the industry as a whole. According to his definition, a cluster should accept a group of companies, suppliers of materials, services, enterprises of other industries, as well as organizations, one way or another connected with the main activity (universities, associations, communications, logistics, etc.) that conduct joint activities on same territory to reduce competition between them. [5].

Different scientists gave different definitions to the concept of a cluster. For example, V. Price considered the cluster as an opportunity to effectively use the advantages of the territorial location of enterprises in the industry and ensure the growth of the efficiency of economic management through the organization of optimal interaction between the state and business. S. Rosenfeld defined the concept of a cluster as a group of interconnected firms that are geographically close to each other and have active business channels, as well as infrastructure, labor market and services. This will allow them to reduce the impact of various risks and obtain an additional synergistic effect from mutual work. [6].

According to these definitions, it can be concluded that the cluster is considered as enterprises geographically close to each other. Other characteristics are mainly related to the association of different organizations and firms. In the work of scientists Bergman and Fezer "Industrial and regional clusters" the main concepts are highlighted, which, in our opinion, reveal the cluster theory especially well, namely: external economies; innovative environment; cooperative competition; intercompany competition; path dependence" [7].

The literature review shows the variety of definitions of the concept of "cluster". Although they do a good job of revealing its qualitative characteristics, they still do not fully reveal its economic essence. It is also important to define clear criteria that can justify the economic results of using the cluster method of firm development.

**Main part.** Analysis of research in the field of problems of management of the agro-industrial complex showed that the state is taking steps to improve the efficiency of gross output, financial support for entrepreneurs engaged in agriculture. in the form of subsidies and loans on flexible terms. However, ways to improve the efficiency of agribusiness management at the regional level have not been investigated. The indicators of the qualitative development of the industry by types of management (crop production and animal husbandry) are not taken into account. Misallocation of grants or specific funding for scientific projects related to the study of the economic efficiency of the Kazakhstan agro-industrial complex and the further economic development of the sector.

In 2021, 22.7 billion tenge subsidies were allocated to support the development of agro-industrial complexes of the East Kazakhstan region, including 5.6 billion tenge for crop production development, 8.8

billion tenge for animal husbandry, 5.8 billion for Investment subsidy, billion including tenure period, 0.5 billion core to support the development of processing industry, 1.9 billion core for other subsidies [8].

According to the National Statistical Office of the Strategic Planning and Reform Agency of the Republic of Kazakhstan. The share of the total output of the East Kazakhstan region in the volume of national output was 10.98% in 2020 only (Table 1).

Table 1

**Data on the gross output of products (services) of agriculture, forestry and fisheries of East Kazakhstan region in the period 2018-2020\***

index	Agriculture, forestry and fisheries	From it:		
		agricultural industry	From it:	
			Crop production	husbandry
1	2	3	4	5
2020 year				
Republic of Kazakhstan, million tenge	6 271 044,3	6 244 313,5	3 605 683,9	2 624 306,7
East Kazakhstan region, million tenge	689 158,2	686 290,3	320 056,7	365 785,3
Specific gravity of East Kazakhstan region,%	10,98	10,99	8,88	13,94
2019 year				
Republic of Kazakhstan, million tenge	5 239 951,7	5 216 454,5	2 896 965,0	2 306 414,9
East Kazakhstan region, million tenge	593 417,0	590 516,6	264 634,0	325 429,2
Specific gravity of East Kazakhstan region,%	11,32	11,32	9,13	14,11
2018 year				
Republic of Kazakhstan, million tenge	4 410 053,3	4 388 637,2	2 331 848,6	2 044 946,6
East Kazakhstan region, million tenge	509 123,4	506 709,0	214 466,0	291 813,6
Specific gravity of East Kazakhstan region,%	11,54	11,55	9,20	14,27

\* Compiled by the author on the basis of data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan [9]

Analysis of the table showed that in the study period the dynamics of production of the complex of Kazakhstan's agro-industrial complex showed positive results. Thus, in 2020, the total level of output is more than 6,271 billion, which is 19.68% higher than 2019. and higher than 2018 42.20%

The total output indicator of the agricultural industry of the East Kazakhstan region also has a positive trend. Thus, in 2020, the production volume is 689 billion Tehsil. which is higher than 2019 and 2018 by 16.13% and 35.36% respectively.

However, it should be noted negative changes in the specific weight indicators of the agro-industrial complex of the East Kazakhstan region in total production of Kazakhstan. meanwhile During the study period This indicator decreased by 1.9% in 2019 and by 4.85% in 2020. In this case, it can be concluded that in the next decade. If this trend continues There will be a complete collapse of the complex agro-industrial sector. and, as a result, increased agricultural prices and a general deficit for the products of the agricultural industry in the region.

A similar situation associated with a decrease in the share of sectoral production in the total production volume in the country is maintained by the type of agriculture. (crop production and animal husbandry)

At the same time, the East Kazakhstan region has great potential for the development of the agro-industry. As of January 2021, according to the Agricultural Statistics Register, 1241 agricultural enterprises (1008 operating entities) were registered in the East Kazakhstan region. while the region is inferior in this indicator compared to the Turkestan, Almaty, Akmola and North Kazakhstan regions with 334 individual enterprises (291 operating), 68,887 farmers and agricultural enterprises (68,727 operating). more than 550,000 hectares with an average yield of more than 17.2 quintals per hectare [11].

Thus, it can be concluded that the agro-industrial bloc in the East Kazakhstan region has a relatively rich potential and requires extensive work to improve the management efficiency of this sector of the economy.

Based on the data presented by the study, we will compile a SWOT analysis of the branch of the Agro-Industrial Center of the East Kazakhstan Region.

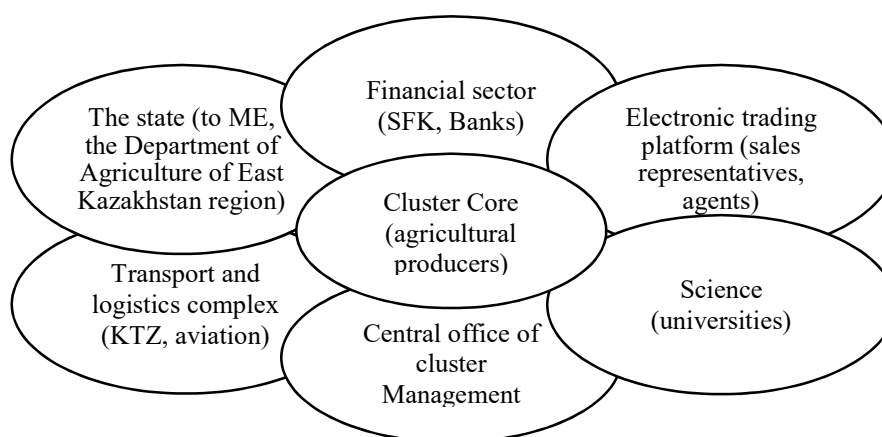
Table 2

**SWOT analysis of the branches of the agro-industrial complex of the East Kazakhstan region\***

Strengths	Weaknesses
<p>Eastern Kazakhstan covers more than 550,000 hectares.</p> <p>increasing demand for food products both in Kazakhstan and in neighboring countries (CIS, Central Asia, China);</p> <p>Availability of subsidies and loans to regional agricultural producers on flexible terms.</p>	<p>Low share of agricultural products in the country's gross domestic product (10.98%).</p> <p>low share of exports</p> <p>Underdeveloped trade and logistics infrastructure with regional relief features</p> <p>lack of e-commerce</p> <p>Lack of scientific research on the economic efficiency of agricultural production.</p> <p>Lack of private funds for research and technology transfer</p> <p>The dependence of natural and climatic conditions due to the peculiarities of the location of the region in a continental climate.</p> <p>The competitiveness and low profitability of the agricultural sector.</p> <p>Over-emphasis on regional corn and sunflower products</p> <p>The lack of practical desire of agricultural producers to form groups due to the specifics of the national and cultural composition of the population in the region.</p>
Opportunities	Threats
<p>increase the production of all types of agricultural products</p> <p>creating conditions for the introduction of technology and attracting investments, including the introduction of digitization of the agro-industry;</p> <p>expansion of the geographic area of supply and export volumes by promising industries</p> <p>Has high potential in the production and export of organic products</p> <p>Increasing irrigation areas and increasing efficiency</p> <p>Creating the conditions for agrarian transformation is the driving force for increasing labor productivity and competitiveness of the agricultural industry.</p> <p>Availability of conditions for the creation of the agro-industrial complex of the East Kazakhstan region.</p>	<p>the uncertainty of the weather Unfavorable changes in natural and climatic conditions.</p> <p>spread of disease in animals and plants pollution of the natural environment (especially water sources)</p> <p>development of competition in international markets due to the accession of the WTO, EAEU;</p> <p>Risk from inefficient controls from both agricultural producers and government due to the lack of cluster technology to manage the industry.</p>

\* Compiled by the author

To ensure the development of the industry cluster Therefore, it is proposed to introduce a complex agro-industrial cluster model. taking into account the specifics of the region especially the location The existing capabilities of transport and logistics infrastructure and complexes are presented further in Fig. 1.



**Figure 1. Model of the complex agro-industrial complex of the East Kazakhstan region**

Note - compiled by the author

The proposed model is unique to origin including non-state. but a producer of agricultural products That is, interested participants must be satisfied, which will solve the problem of motivating other enterprises to concentrate on their activities in the agro-industrial complex.

The second partner of the cluster is the State, which provides the core interests of the cluster with state legislative and regulatory safeguards for the region's agro-industrial clusters.

The transport and logistics complex will be developed as part of the cluster as a tool for the transportation of goods and services of the agro-industrial complex in the region.

The financial sector is represented by banks and financial organizations that provide financing for projects of the core of the cluster and subsidize some branches of agriculture under state programs.

The platform developer offers an electronic trading platform as an example of an electronic service in the form of an application for its trademark or agent's trade agent (e.g. BOOKING.COM).

Science will be offered by universities that provide both human resources and funded science and development projects.

The central office of cluster management will ensure efficient coordination between cluster members.

**Conclusions.** Based on an analysis of research and publications on this topic. In conclusion, the issues related to the provision of effective management tools to industries in the agro-industrial complex of the East Kazakhstan region are:

1. Lack of funding development in the direction of research on the economic efficiency of agro-industry.
2. The absence of scientific projects under funding and project-targeted financing projects in the direction of research on the economic efficiency of the management of agro-industrial complexes.
3. There are no separate regional development programs of agro-industrial complexes for animal husbandry and crop production.
4. The reckless attitude of agricultural producers to cooperation in the complex agro-industrial complex of the region.
5. The institutional problem of complex agro-industrialization is unresolved due to poor quality control of the implementation of agricultural development projects in regions where there is a lot of potential [12];
6. Problems in implementing the National Export Strategy B.E. 2565
7. Problems of transportation and logistics complex in the region due to the nature of the mountainous terrain of the region.
8. Problems of industrial management within the framework of Kazakhstan's membership in the Eurasian Economic Union and the World Trade Organization. This creates opportunities and at the same time creates high demands for competition both in the domestic and international markets.

From the above information it is advisable to take a number of measures that will solve the above problems or increase the efficiency of the agricultural industry in the region and increase the share of agricultural products in the region's GDP:

1. Work on the introduction of cluster technology into the management system of the region's agro-industry.
2. Carry out clarification work among agricultural producers on the necessity of establishing a regional cluster by incorporating the latter in the cluster.
3. Develop a program to develop INCL's export strategy until 2022.
4. Improving railway infrastructure and aviation capabilities
5. Allocate funds for elevator construction projects in hard-to-reach areas of the region until 2024.

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## ШЫҒЫС ҚАЗАҚСТАН ОБЛЫСЫНЫҢ АГРОӨНЕРКӘСІПТІК КЕШЕНІН КЛАСТЕРЛІК ТӘСІЛДІҢ НЕГІЗІНДЕГІ ТИІМДІЛІГІН БАСҚАРУ

### Андатпа

Бұл мақалада авторлар агроөнеркәсіптік кластерге (АӨК) назар аударды. Шығыс Қазақстан облысы ауыл шаруашылығына қолайлы климаттық жағдайлармен, облыс экономикасының ең инвестициялық тартымды секторларының бірі болып табылатын агроөнеркәсіптік өндірістің жоғары шоғырлануымен, бірқатар басқа да салалардың тұрақты дамуының маңызды шартымен сипатталады. және Қазақстанда ғана емес, шет елдерде де ірі азық-түлік корпорацияларына біріктірілген.

Облыстың жалпы өнім шығару серпінінің зерттеумен белгіленген проблемалары, оларды еңсеру жөніндегі іс-шаралар болмаған жағдайда, алдағы онжылдықта өңірдің АӨК-нің осындай үрдісі сақталған кезде толық құлдырауға алып келеді. Нәтижесінде, бұл бағаның өсуіне және аймақтағы өнімдерге жалпы тапшылықтың дамуына қауіп төндіреді.

Зерттеу нәтижелері бойынша жалпы республикалық көлемде агроөнеркәсіптік өңірдің үлес салмағының теріс серпініне алып келген проблемалар анықталды, олардың ішінде: агроөнеркәсіптік кешеннің экономикалық тиімділігін зерттеу бағыты бойынша гранттық және бағдарламалық-нысаналы қаржыландыру бағдарламалары бойынша қаржыландырылатын эзирлемелердің және ғылыми жобалардың болмауы, сондай-ақ бай әлеуеті болған кезде өңірдің ауыл шаруашылығын дамыту бағдарламаларын іске асыру процестерін реттеу сапасының төмен болуына байланысты қазіргі уақытта шешілмеген институционалдық проблемалар.

Нәтижесінде облыстық ауқымда кластер өзегінен және алты қатысушыдан: мемлекеттен, көлік-логистикалық кешеннен, қаржы секторынан, электрондық сауда алаңынан, ғылымнан және кластерді басқарудың орталық аппаратынан тұратын агроөнеркәсіптік кешенді басқару жүйесіне кластерлік технологияларды енгізу бойынша бес іс-шараны іске асыру ұсынылды.

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## УПРАВЛЕНИЕ ЭФФЕКТИВНОСТЬЮ АГРОПРОМЫШЛЕННОГО КОМПЛЕКСА ВОСТОЧНО-КАЗАХСТАНСКОЙ ОБЛАСТИ НА ОСНОВЕ КЛАСТЕРНОГО ПОДХОДА

### Аннотация

В данной статье авторы сосредоточили свое внимание на агропромышленный кластер (АПК). Восточно-Казахстанская область характеризуется благоприятными климатическими условиями для ведения сельского хозяйства, высокой концентрацией агропромышленного производства, которое является одной из самых инвестиционно привлекательных отраслей региональной экономики, важнейшим условием устойчивости ряда других отраслей и интегрировано в крупные продовольственные корпорации не только Казахстана, но и зарубежных стран.

Установленные исследованием проблемы динамики валового выпуска продукции области, в случае отсутствия мероприятий по их преодолению, повлекут в ближайшее десятилетие при сохранении такой тенденции АПК региона полный упадок. Как следствие, это грозит повышением цен и развитие общего дефицита на продукцию в регионе.

По результатам исследования были выявлены проблемы, которые привели к отрицательной динамике удельного веса агропромышленного региона в общереспубликанском объеме, среди которых: отсутствие финансируемых разработок и научных проектов по программам грантового и программно-целевого финансирования по направлению исследования экономической эффективности агропромышленного комплекса, а также институциональные проблемы, не решенные по настоящее время из-за низкого качества регулирования процессов реализации программ сельскохозяйственного развития региона, при наличии богатого потенциала.

В результате предложено реализовать пять мероприятий в областном масштабе, в частности, по внедрению кластерных технологии в систему управления агропромышленного комплекса, состоящий из ядра кластера и шесть участников: государства, транспортно-логистического комплекса, финансового сектора, электронной торговой площадки, науки и центрального аппарата управления кластером.

