

# Clustering of agroindustrial complex of the Republic of Kazakhstan in the context of competitiveness

## Agrupamiento del complejo agroindustrial de la República de Kazajstán en el contexto de la competitividad

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#### ABSTRACT:

The article considers theoretic – methodological basis of a clustering of economy of the Republic of Kazakhstan, the basic directions of development of agroindustrial complex under the program of modernization of economic policy of modern Kazakhstan, the main ways of enhancing competitiveness through cluster initiatives.

**Keywords:** Clustering, agriculture, economy, modernization.

#### RESUMEN:

El artículo considera la base teórico - metodológica del agrupamiento de la economía de la República de Kazajistán, las direcciones básicas del desarrollo del complejo agroindustrial bajo el programa de modernización de la política económica del Kazajistán moderno, las principales formas de mejorar la competitividad a través de iniciativas de clúster.

**Palabras clave:** Agrupación, agricultura, economía, modernización.

## 1. Introduction

In the framework of the program of modernization of economic policy of modern Kazakhstan the main ways of enhancing competitiveness through cluster initiatives focused on the creation of a favorable macro environment, including the investment climate, measures to improve productivity and competitiveness of the national economy. Competitiveness is defined as a property of objects that characterizes the degree of satisfaction of specific needs in comparison with the best similar objects represented in this market (Altukhov, A. A., 2014).

Enhancing competitiveness through cluster initiatives is becoming a basic element of development strategies of most countries. The analysis of more than 500 cluster initiatives implemented over the past 10 years, in 20 countries, confirmed a significant increase in their competitiveness. This effect was achieved due to investment growth and formation of

new companies, strengthening of export potential, increase of employment, development of new technologies, strengthening competitiveness and productivity of corporations that are members of the cluster, development of close ties between science and production.

The development of infrastructure, improve the educational level and competencies of employees of corporations. Competitive relationships are forcing businesses and entire Corporation to evolve and improve. Given a reasonable shift of focus of public policy from macro - to micro-level and the presence of certain territories as an important factor in the development of clusters in the process of developing the strategy significantly increases the role of regional administrations (Altukhov, A. A., 2014).

## 1.1. Research experience

Analysis of the global economic practice shows that the most cost-effective, competitive and promising direction of development of business is industrial cooperation, which involves small, medium and large businesses, which ultimately leads to the establishment of industrial units called clusters (Amelina T. N.,2017).

M. Porter identifies the most important features of the category: "a cluster is a group of geographically neighbouring interconnected companies and related organizations operating in a certain area, characterized by common activities and complementary to each other." These enterprises form the production chain for specific product (Table.1), (Porter, M. E., 2002).

**Table 1**  
Influence of clusters on competitiveness (M. Porter).

<b>The direction of the impact of clusters on competitiveness</b>		
Increased productivity of firms and industries	Create opportunities for innovation and industrial growth	Promoting and facilitating the formation of a new business that supports innovation and expansion of the cluster
1. Competition creates more efficient specialization within a cluster	1. The creation of channels for effective cooperation of potentially new resources for innovation	1. The best competence in handling venture capital and the development of fast-growing companies
2. The emergence of more demanding consumers. A higher level of specialization in the production process creates opportunities to take advantage of economies of scale, for example, joint purchase of raw materials, or conducting joint marketing research	2. Early detection and forecasting technology trends	2. Communication and links within the cluster contribute to the emergence of complementary skills, technologies and subsidies. The ability of companies to attract complementary skills allows you to participate in larger transactions in which individual companies are not competitive
3. Access to technology, suppliers, skilled labour, information, business services etc.	3. A favorable environment for the emergence of combinations of previously existing qualifications	3. Support the emergence of new participants

	(abilities)	
4. A high level of expertise to help improve supply chain and also contributes to the process of cooperation and learning (improvement) in the cluster	4.Favorable conditions for risk allocation	4. Strengthening social and other informal links, leading to new ideas and business
5. Clustered development can improve the infrastructure of professional, financial, and other services	5.Improved information flows within the cluster	

M. Porter argues that clusters can influence competition in 3 ways (Porter, M. E., 2002):

- they can increase the performance of the companies in the cluster;
- they can stimulate innovations;
- they can stimulate the development of new business areas.

Porter identifies several of the roles of the clusters in the economic development of any region:

- clusters are critical engines in the economic structure of national and regional economy.

Regional prosperity depends on significant positions in a number of competitive clusters:

- clusters can identify fundamental problems in national or regional business conditions: the clusters largely correspond with the nature of competition and microeconomic factors that influence competitive advantages;
- clusters provide a new way of thinking in the economy and development efforts of its organization.

In a more narrow sense, understand cluster group located at a sufficient geographical proximity of interconnected companies, suppliers of equipment, components and services, research institutes, universities and other organizations, complementary and reinforcing competitive advantages of each other.

## 2. Methodology

In the process of the study were used General methods of research: methods of analysis of financial statements: horizontal, vertical, ratio, comparison, and other.

To study the cluster system of Kazakhstan were used General scientific and special research methods:

- review of the regulatory framework;
- analytical method;
- economic-mathematical calculations.

### 2.1. The relationship of forms of research

Unlike traditional forms of cooperation and economic interaction of large, medium and small agribusiness, cluster structures are characterized by a number of economic advantages: the cluster approach focuses the resources of cluster participants for innovation "points of growth" and not spray them at depressed regions and industries; as a result of the successful development of such "growth points" formed the economic potential for the production of innovation and further accelerated the transformation of existing clusters. Note that clusters are not a legal form and retain the economic and legal independence of their member participants in contrast to agricultural holdings where there is total or partial loss of autonomy of their participants (Bidelmanova M. M., 2012).

Clusters is a special culture among entrepreneurs, which has no formal links with representatives of the business community and other spheres of the production process (science, power, etc.), and a new cooperative thinking. Due to this competitive cluster

approach in the economy gives the chance to trace the entire causal chain, from target setting business or any other activities to ways to meet the needs of the final recipient of goods, works or services.

Currently there is no clear and unambiguous values of the concept "cluster". In General, the cluster in the economy - is United in a certain area Alliance of interrelated companies (research institutes, corporations, universities), complementary, interchangeable each other, and thus enhancing the competitive features and benefits of each, and the cluster as a whole.

The basis of the idea of creating clusters lies the geographic location, regional restriction site, and a small distance of the constituent elements of the cluster. All cluster members have similar features and differences to increase competitiveness. The core of the cluster is usually choose a number of the largest companies, between which there remains competition. This cluster supports and integrates the work of a wide variety of smaller organizations and firms, and focuses them on the creation of innovations. Due to the fact that the clusters have an innovative orientation, a large number of countries in their economic activities have been increasingly used for the implementation of their innovative programs cluster approach (Gradov S. I., Kovalev I. V., 2009).

In the current economic conditions the state is constantly actualize the problem of formation and implementation of effective strategies for socio-economic development of the regions of Kazakhstan. The development strategies of the region based on traditional methods often fails to achieve high end results and requires a new approach – strategy formation based on the development of agro-industrial clusters.

The formation of the agro-industrial cluster can be done in the following interrelated ways, namely:

- on an objective basis, taking into account objectively the emerging development of agriculture and systems of relations in this sector of the economy;
- on a subjective basis in accordance with the purposeful action of the state and local governments, business entities or public organisations. Despite several announced regional programmes for the creation of clusters, their formation in many regions is carried out not systematically, but through trial and error.

Clusters are often formed without necessary taking into account existing relationships, the complementarity of the participants, the role of various forms of farming (especially small business firms), lack of development of infrastructure for processing and marketing of products and lower capacity utilization of processing plants. In the presence of clusterization focus of many regional programs and existing constraining agro-food policy in our country the process of the purposeful formation of agro-industrial clusters is not as fast and wide as it seemed at the beginning of the cluster movement. In addition, the situation is compounded by lack of Strategy and methodology for the creation and development of competitive clusters (Dulambaeva R. T., Abdulmanova G. M., 2014).

The formation of agro-industrial clusters possible in the main areas: interfarm cooperation, territorial cooperation at the district and regional levels, inter-regional cooperation. The development of these areas due to objective economic process involving, on the one hand, with the social division of labor and specialization, technological progress, natural-economic conditions, on the other hand the need for collaboration between specialized sectors and types of agricultural and industrial production.

The district Association may join the Corporation at the zonal level, combining several of the processing organizations. However, for the interaction of interests of participants of the regional branch of the subcomplex, it is necessary to create agro-industrial formation, contributing to vertical integration, which combines agricultural production with processing and marketing of products, logistics and agricultural services (Dosybekova G. K., 2010).

A special place in the establishment and operation of agro-industrial clusters should take scientific and scientific-educational structures. Traditionally this role in the regions within universities, agricultural Academy, various science centers. Important role in the functioning of agro-industrial clusters are to fulfil the organizations of consumer cooperation which are

not only as close as possible to rural residents, but have many years of experience purchasing and sale activities in the village and most importantly - located in many rural areas of the country.

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### 3. Results

Important for the process of intensive growth of cluster in the agriculture of Kazakhstan has a state policy at macro and meso level. Porter noted a special role in the economic development of the region and the Executive authorities. This:

- improve the macroeconomic, political, legislative and social background;
- improvement of social conditions for citizens;
- improving conditions for doing business;
- improving the accessibility, quality and efficiency of infrastructure and educational institutions;
- the promotion of education and development cluster (identification of existing and emerging clusters, as well as participation in the definition of the cluster barriers and developing plans to eliminate them);
- "institutes of improvement of competitiveness", which citizens were informed and mobilized the private sector, governments at all levels, educational and other institutions and all civil society (Gussenov B. S., 2015).

Despite the fact that the global statistics indicate that the role of individual firms in the creation of clusters, however, the value of the regulatory functions of the state in the economy, agriculture can hardly be overestimated. Given that innovation management in the global economy is based on the implementation of the basic provisions of the theory of organizational behavior and implementation of integration processes, the specifics of agricultural production shows that the first direction in agriculture difficult to implement. Therefore, in the process of agricultural production the priority of the creation of innovative management remains for methods of strengthening of integration processes in this field.

Integration processes in agricultural production cannot develop by themselves. Otherwise these processes can be fairly slow. Therefore, the state should encourage these processes, including the creation of clusters, which are all available in its disposal [9]. But this should be preceded by certain calculations and to determine the possible effectiveness of clustering on the territory of the Republic of Kazakhstan.

In fact, it is obvious that the regulatory framework of the state, the process of formation of human potential and many other processes take place in a specific territory and they need to differentiate on how the creation of certain clusters in the state. Therefore, the range of issues that should be solved by public authorities must be in the field:

1. The use of subsidies and concessional lending to create initial capital, i.e. to purchase the latest technological lines. The necessity of these measures is dictated by the fact that when you create the cluster as one of its main purposes should be as broad as possible involvement of representatives of small and medium business and the purchase of new technological equipment of the best foreign analogues, which they can't implement fully because of lack of funds.
2. An active fiscal policy aimed at production of quality consumer goods of daily demand on-site clusters. This set of measures, on the one hand, may include: gradual reduction of tax rates in direct taxation and the abolition of specific socially needed public goods, rates of indirect taxes, including VAT, to hold the address of the imported policy in gradual increase of import duties up to 300% on selected products.
3. The introduction of new technologies, which involves the relevant skills of the labour force. Preparation of qualified personnel for the cluster is impossible without financial participation of the state structures, then into the tasks of the scientific-production center, organized on the basis of local universities, should include feasibility study of projects. The analysis of these projects are the questions:

- the demand for a particular product on the market in the short and long term and the scale of its market;

- choice of technologies corresponding to the best foreign analogues; - the availability of necessary materials and raw materials of local production;

-the impact on the production of the product of internal and external factors; - determination of the effect of the animations generated by the functioning of the cluster (Tarasov M. E., 2014).

An important role in the formation and development of agricultural clusters must play an adequate support from the regional authorities in the direction of facilitating the formation of cluster system; the organization of information support of cluster development; ensure the implementation of cluster programmes to improve the competitiveness of products; promote formation of favorable economic conditions for further development of the cluster.

The result is due to the synergy effect and economies of scale of production, expand the range of products, primarily in the form of regional brands, and a comprehensive clustering will be able to optimize all of the organizational and economic processes in the way agricultural and food products from field to consumer. In addition, by expanding the scale of production would lead to expansion of the area "coverage" of a regional cluster that will enable us to reach new markets, and this will lead to significant economic development of the region, and further to transformation of existing clusters in new, more sophisticated clusters.

### 3.1. The analytical aspect

In agriculture of Kazakhstan, which until 1990 produced 22% of the national GDP, and now only 5.5% (in 2017 – 6%) from 2010 began a slow rise, as shown by table 2. So, in general, the gross output in 2017 in comparison with 2010 increased in 2,6 times (in current prices), including crop production – 2.34 times and animal breeding 3.0 times (stat.gov.kz).

**Table 2**  
Dynamics of development of gross output of agriculture of Kazakhstan  
(in current prices, billion tenge).

Year	Total	Including	
		crop	animal
2010	533,6	325,8	207,8
2011	557,4	325,3	232,1
2012	615,4	355,7	259,7
2013	698,8	391,2	307,6
2014	763,8	400,2	363,6
2015	853,3	432,5	420,8
2016	1121,8	630,8	491,0
2017	1384,2	761,1	623,1

A result of the reforms in the agricultural sector was the fragmentation of large state-owned estates in favor of small farms as indicated in table 3 (stat.gov.kz).

**Table 3**

The structure of ownership in agriculture of Kazakhstan.

Form of ownership	Number, thousand units		Share different shapes, %		Deviation 2017 from 2010	
	2010	2017	2010	2017	quantity in %	according to the specific weight in the structure, %
all agricultural units	131,3	201,17	100	100	159,6	-
including:						
state (public)	0,12	0,11	0,1	0,01	91,7	-0,09
business partnership	4,8	5,3	3,6	2,53	110,4	-1,07
joint stock company	0,3	0,06	0,2	0,02	73,3	-0,09
production cooperatives	2,88	1,2	2,2	0,6	41,7	-1,6
peasant (farmer's) economy	123,3	194,5	293,9	96,0	163,2	+2,1

From table 3 it can be seen that currently the share of private (peasant) farms in Kazakhstan accounts for 96% of ownership. However, the small agricultural production is often not competitive market in a dispute over income from large estates.

A major factor in the formation of clusters in Kazakhstan was the prospect of enterprises in its territory of investment of funds allocated for technical and technological updating of the enterprises, which are included in the cluster.

However, until now, the level of Bank lending in agriculture of Kazakhstan remains low. Therefore, the main source of investment in the development of national agricultural production remain resources of the Ministry of agriculture, shown in table 4.

**Table 4**

Financing agriculture through the Ministry of agriculture of Kazakhstan (million tenge),( stat.gov.kz).

Year	Funding	Including:	
		subsidies	loans
2011	27248,2	1791,6	6238,3
2012	39615,7	4702,8	17208,2
2013	48106,9	8037,7	21000,2
2014	56560,1	8008,5	28053,2

2015	65698,7	16795,6	27917,5
2016	77908,8	21511,5	26217,3
2017	133761, 5	40188,6	52624,8

From table 4 it is seen that the level of support of innovative activity of agricultural producers from the state is very high, but it is insufficient to solve the problem of renewal of fixed capital in agriculture of Kazakhstan in full.

## 4. Conclusions

Cluster development in Kazakhstan has more opportunities than threats. Therefore, Kazakhstan should be given to the development of clusters more attention both from the point of view of the development of scientific research in this field, and from the point of view of the already accumulated business experience and overcome the currently existing problems in the national cluster development. This allows to draw the following conclusions:

1. The experience of creating clusters in Kazakhstan shows that they acquire is almost always regional in nature, but not all aspects of their functioning at the regional level and the state fully worked out in their territory. This generates not only positive but also negative effect, manifested mainly in the fact that while expected results from their operation is somewhat lower than planned.
2. Unambiguous assessment of the effectiveness of the national cluster strategy of Kazakhstan yet, as the experience of cluster functioning in foreign countries the effects could occur in 5-7 years. The clusters should develop not only in terms of certain special economic zones, but also to the system of their functioning was accompanied by a set of other financial and organizational reforms, enshrined in a special state and institutional regulations.
3. Most effective national agro-industrial clusters function when the state is the technique of choice locations and the efficient system of incentives to attract people to the system of their economic activities. The complex economic incentives and government measures should be aimed at the development of entrepreneurial interests to work together, to bring the market infrastructure, to solve the problems of the commodity production and increase recycling results of its activities, to strengthen foreign investors ' participation to the activities of the clusters (Tokolova A., 2016).

The advantages of agro-industrial clusters can be fully attributed to the implementation of the region's competitive advantages in food production associated with geographic location, climate, extensive areas of agricultural production regions, etc., of the possibilities inherent in them as an integrated system, aimed at improving techniques and technologies. Thus, the strategic importance of such clusters is that due to the existing competitive advantages in the market of agricultural products, raw materials and food, at the expense of change, innovation and improves the quality of products to enter the national market.

### 4.1. Brief description

**Table 5**  
**SWOT – analysis of practice for the operation of clusters in Kazakhstan**

<b>Weaknesses</b>	<b>Strengths</b>
<ul style="list-style-type: none"> <li>- lack of investment resources for members of the cluster;</li> <li>- lack of knowledge and experience of joint actions;</li> </ul>	<ul style="list-style-type: none"> <li>- the presence of the effect of state aid;</li> <li>- the accelerated pace of innovation in the cluster with the help of government policies;</li> <li>- the availability of preferential financial conditions;</li> </ul>



- weak motivation of the ways of introduction of innovations and attraction of foreign investors;	
- the lack of real tools to attract people to the system of functioning of clusters; -lack of waste legislation and procedure institutional transformation.	- improved focus of the banking system to the problems of agriculture; - strengthening national food security.
<b>Threats</b>	<b>Opportunities</b>
- loss of effect from cluster formations; - low growth of innovation and competitiveness; - collapse of production of the Republic of Kazakhstan to the WTO.	- improving the training of agricultural producers; - development of understanding of the need for integrated interaction and mutual support; - to improve the methodology for selecting the location of the cluster; - the development of information technology.

In Kazakhstan there are potential conditions for the development of cluster production and processing of milk; traditional livestock management; large areas of grassland; high rural population; availability of free capacities for processing milk; modernization of processing industry with the involvement of new technologies of milk processing; the growth of effective management and support for government to primary sector and processing industries.

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