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CLUSTER DEVELOPMENT OF AIC AS A FACTOR OF ENSURING FOOD SECURITY

АӨК КЛАСТЕРЛІК ДАМУЫ АЗЫҚ-ТҮЛІК ҚАУІПСІЗДІГІН ҚАМТАМАСЫЗ ЕТУ ФАКТОРЫ РЕТІНДЕ

КЛАСТЕРНОЕ РАЗВИТИЕ АПК КАК ФАКТОР ОБЕСПЕЧЕНИЯ ПРОДОВОЛЬСТВЕННОЙ БЕЗОПАСНОСТИ

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Abstract. A cluster approach to the development of agricultural sector, which is capable of ensuring the country's food security, is considered. The role of the State in increasing the competitiveness of agricultural products is determined, taking into account the influence of specialization and rational location of production in the region, the formation of specialized commodity zones. It is emphasized that a modern position is needed in solving the problems of food self-sufficiency of the regions based on the indicator of production volume of basic agricultural products per capita based on scientifically justified consumption rates. The importance of creating a cluster in food industry for ensuring deep processing of raw materials, obtaining high-quality high value added products at prices comparable to those of the Eurasian Economic Union member States is shown. The importance of cluster scheme of food industry is considered and identification of key industries, in which the main industry is agriculture. It is determined that clusters have impact on the growth of product competitiveness in three directions: increase of productivity in the industry; creation of opportunities for innovative activity; stimulation of agribusiness development.

Аңдатпа. Елдің азық-түлік қауіпсіздігін қамтамасыз етуге қабілетті аграрлық секторды дамытуға арналған кластерлік тәсіл қарастырылған. Өңірдің аумағында өндірісті мамандандыру мен ұтымды орналастырудың, мамандандырылған тауар аймақтарын қалыптастырудың әсерін ескере отырып, ауыл шаруашылығы өнімдерінің бәсекеге қабілеттілігін арттырудағы мемлекеттің рөлі анықталған. Тұтынудың ғылыми негізделген нормалары бойынша жан басына шаққандағы негізгі ауыл шаруашылығы өнімдерін өндіру көлемінің көрсеткіші негізінде өңірлерді азық-түлікпен өзін-өзі қамтамасыз ету проблемаларын шешуде қазіргі заманғы ұстаным қажет екендігі атап көрсетіледі. Еуразиялық экономикалық одаққа қатысушы мемлекеттердің өнімімен салыстырылатын бағалар бойынша жоғары қосымша құны бар жоғары сапалы өнім алу, шикізатты терең өңдеуді қамтамасыз ету үшін тағам өнеркәсібінде кластерді құрудың маңызы көрсетілген. Басты сала ауыл шаруашылығы болып табылатын негізгі салаларды бөле отырып, тағам өнеркәсібінің кластерлік сызбасы қарастырылды. Кластерлер өнімнің бәсекеге қабілеттілігінің өсуіне үш бағыт бойынша әсер ететіні анықталған: саладағы өнімділікті арттырады; инновациялық белсенділік үшін мүмкіндіктер туғызады; агробизнесті дамытуды ынталандырады.

Аннотация. Рассмотрен кластерный подход к развитию аграрного сектора, способный обеспечить продовольственную безопасность страны. Определена роль государства в повышении конкурентоспособности сельскохозяйственной продукции, с учетом влияния специализации и рационального размещения производства на территории региона, формирования специализированных товарных зон. Подчеркивается, что необходима современная

позиция в решении проблем продовольственного самообеспечения регионов на основе показателя объемов производства основных сельскохозяйственных продуктов в расчете на душу населения по научно обоснованным нормам потребления. Показано значение создания кластера в пищевой промышленности для обеспечения глубокой переработки сырья, получения высококачественной продукции с высокой добавочной стоимостью по ценам, сопоставимым с продукцией государств-участников Евразийского экономического союза. Рассмотрена кластерная схема пищевой промышленности с выделением ключевых отраслей, в которой главной отраслью является сельское хозяйство. Определено, что кластеры оказывают влияние на рост конкурентоспособности продукции по трем направлениям: повышают производительность в отрасли; создают возможности для инновационной активности; стимулируют развитие агробизнеса.

Key words: agriculture, cluster, food security, region, competitiveness, production, food industry, raw materials, products.

Кілттік сөздер: ауыл шаруашылығы, кластер, азық-түлік қауіпсіздігі, аймақ, бәсекеге қабілеттілік, өндіріс, тағам өнеркәсібі, шикізат, өнім.

Ключевые слова: сельское хозяйство, кластер, продовольственная безопасность, регион, конкурентоспособность, производство, пищевая промышленность, сырье, продукция.

Introduction. One of the new methods of economic policy of the state in the modern world is the cluster approach. In recent years, powerful and indisputable evidence of the effectiveness of clusters capable of ensuring the country's food security, the competitiveness of products with high added value, etc., has appeared in Kazakhstan. Cluster analysis is a modern method for studying the processes and laws of competition.

Clusters take different forms depending on their depth and complexity, but in most cases include the companies of the finished product or service companies, suppliers of specialized factors of production, components, machines, as well as services, financial institutions; firms in related industries. Clusters include firms operating in grassroots industries, by-product producers, specialized infrastructure providers, government and other organizations that provide special training, education, information, research and technical support, and standards-setting agencies.

The successful experience of such countries as USA, Austria, Germany, China, etc. is widely known. The essence of the method is that the properties and capabilities of clusters are used to be points of economic growth. This is based on a special combination of a number of conditions: the territorial concentration of enterprises, the opportunities for producing innovations in the sphere of interbranch relations, and the high quality of the institutional environment of the cluster (intensive interaction of economic agents). The absence of an appropriate scientific and theoretical basis, the concept of the development of territorial and sectoral clusters, as well as the experience of creating full-fledged clusters with a well-established system of interaction between enterprises and organizations leads to the fact that a cluster is often understood to mean any form of territorial concentration of production, any organizational formation, performing a closed technological cycle "production - processing - realization" of agricultural products.

Material and methods of research. Nevertheless, the formation and development of clusters in the economy is slower than in plans and forecasts.

In many respects this is a result of the fact that regional politicians with the same goals and instruments are formed, the specific features of clusters are not taken into account, clusters are "formed" artificially with the aim of obtaining state support [1]. It is not unusual for a situation where the choice of clusters is based on subjective decisions. Methods and tools for stimulating clusters are developed taking into account the evolutionary characteristics of each individual cluster - the stage of the life cycle, the driving forces, the level of institutional development. Not every group of enterprises is a cluster and has sources for cluster development. In this case, the measures of the regional cluster policy may be in vain. Obviously, it makes sense to stimulate clusters that already show clear signs of development (at the stage of a developing or at least emerging cluster).

The identification of clusters should be considered the first and mandatory stage of regional cluster policies. The world has accu-

mulated a wealth of experience in the identification and evaluation of clusters. There are methods of quantitative analysis based on the use of statistical data (localization coefficients, complex methods of Harvard University and the European cluster observatory), and methods of qualitative analysis (case study, genealogical tree method, surveys, etc.).

World experience shows that clusters provide complementarity between the agribusiness sectors, contribute to the improvement of the investment climate, the effective use of knowledge and technologies, stimulates innovative processes, and thus increase the competitiveness of agricultural enterprises.

Results and their discussion For some, specific or large statistical data are needed, other methods are quite labor-intensive. The lack of a simple and sufficiently reliable method for identifying and evaluating clusters is one of the reasons why these actions are not being implemented in the process of developing regional cluster policies.

According to the type of life cycle of a commodity, enterprise, industry, the stages of origin (occurrence), formation, development (growth), disappearance (decay or transformation) are distinguished. Clusters as a self-organizing system arise spontaneously in the economic environment and therefore remain unobservable for the participants and the external environment for a while, appear against the background of congestion of companies (agglomeration), but not every agglomeration subsequently evolves and becomes a cluster. Given this circumstance, the first stage in the development of a cluster is not called its origin, but the stage of agglomeration. Generally, the following stages are distinguished: agglomeration, emerging cluster, developing cluster, mature cluster and transformation (or state of decline).

To develop the cluster, three key conditions are necessary: the territorial concentration of companies (agglomeration); a variety of technological chains and links between industries as a source of innovative development; institutional cluster environment. The absence of at least one of these conditions will not allow the agglomeration to evolve into a cluster. Secondly, in each direction, the results (effects of development) should be visible. Therefore, six groups of criteria were singled out.

The main indicator of the size of the cluster is the number of its participants, including key categories (cluster core, small and medium business enterprises). More significant estimates are not nominal, but real participation in the cluster network. The compactness of the placement of participants can be estimated from distances between the core enterprises, medium and maximum distances. In addition, a statistical assessment should be given of the level of concentration of industries in a given territory (localization coefficients) [2].

In Kazakhstan, efforts are concentrated on creating favorable conditions for the formation of clusters, including food.

A coordinating council for the development of clusters in the food industry and territorial working groups for cluster areas have been established: the grain processing industry - Akmola, Kostanay, North Kazakhstan regions; meat - Pavlodar; Dairy - Almaty, East Kazakhstan, Kostanay, North-Kazakhstan regions; rice - Kyzylorda region; fishing - Atyrau region; sectoral working group "Food Industry" - Almaty region; branch working group "Food Industry" - East Kazakhstan region.

The state plays an active role in the functioning of the cluster and increasing competitiveness in the production of agricultural products. Through financial levers and legislative acts, the government provides benefits to enterprises involved in the processing of agricultural products [3].

Taking into account that the creation of new cluster-based production facilities will require significant financial resources, the restoration of priority production facilities should be provided mainly on the basis of existing production capacities in the territory of Kazakhstan. Self-provision of the population with food is the rational provision of population of regions and regions with high-quality products on the basis of effective demand and supply. This should be achieved on the basis of effective use of local soil-climatic and economic differences between regions and regions of the republic. This takes into account the influence of specialization and the degree of rationality in the location of production in the region, as well as the level of the formation of specialized zones of commodity production, and the development of interregional product exchange. In this regard, a modern approach to the formation of the concept of food self-sufficiency of the regions is needed [4].

Food security is largely determined on the basis of the index of production of basic agricultural products per capita according to scientifically justified consumption norms, kg per year given in the second chapter: grain in weight after refining - 120 kg, meat - 42 kg., Milk - 180 kg., Eggs (pieces) - 105.

At present, the level of self-sufficiency of the regions of Kazakhstan with food is not uniform.

The division of regions into producing (exporting), self-supporting and consuming (importing) regions is determined. The following regions are producing (exporting) grain: Akmola, Kostanay, Pavlodar, much higher than the consumption per capita by 25 times. The self-supporting regions for grain include: Aktyubinsk, Almaty, West Kazakhstan, Zhambyl, Karaganda, Kyzylorda, South Kazakhstan, Pavlodar, East Kazakhstan, or 69%. The Atyrau region, consuming (exporting) the grain, includes the population six times less than the scientifically justified consumption rate.

In relation to the production of meat, the producing regions (importing) include the following regions: Kostanay, North Kazakhstan, or almost twice the consumption per capita. The self-sufficient regions for meat production are Akmola, Aktobe, Almaty, Atyrau, West Kazakhstan, Zhambyl, Pavlodar, East Kazakhstan, or those regions that provide only the local food market in accordance with the per capita consumption rate.

Consuming (exporting) meat production regions are: Karaganda, Kyzylorda, Mangistau, South-Kazakhstan. The regions that produce dairy products are Akmola, Aktyubinsk, West Kazakhstan, Kostanay, Pavlodar, North-Kazakhstan, East Kazakhstan, producing twice the consumption per capita.

The self-supporting regions for milk production include: Almaty, Zhambyl, Karaganda, South-Kazakhstan. Consuming (exporting) dairy products include the following regions: Atyrau, Kyzylorda, Mangistau, lacking 2 to 30 kg per capita per year.

And, finally, in the production of eggs to regions producing regions are: Almaty, Kostanay, North Kazakhstan, or twice the norm of consumption per year. The self-supporting regions for the production of eggs include: Akmola, Aktyubinsk, West Kazakhstan, Karaganda, Pavlodar, East Kazakhstan. Consuming (exporting) these products include regions such as: Atyrau, Zhambyl, Kyzylorda, Mangistau, South-Kazakhstan or consuming eggs below scientifically sound standards, in some regions it is almost 6-10 times less.

Thus, the producing (exporting) include regions in which such crucial factors of food supply are combined, as the more favorable natural conditions of agriculture and the increased amount of agricultural land per capita.

The main task for today to ensure food security remains the formation of a cluster in the food industry. And the emphasis should be on deep processing of raw materials, obtaining high-quality products with high added value, at prices comparable to similar products of WTO member countries and the Eurasian Economic Union [5]. To do this, it is necessary to exclude intermediaries in the chain from cultivation to realization, linking the production stages into a single vertical integrated structure, i. E. more actively use the cluster approach.

According to the assessment of Kazakhstan's competitive advantages, the food industry cluster is chosen as one of the seven priority areas. The essence of the notion of competitive advantages lies in the fact that the possibility of each country is determined by its inherent advantages in any industry, production, etc., in which it can be competitive.

The following key industries are identified in the cluster scheme of the food industry:

♦agriculture as a supplier of raw materials;

♦food machinery (supplier of equipment for food production);

♦ packaging production;

♦infrastructure industries, including production and scientific and technical services; intermediary, trading and marketing organizations; financial and credit organizations; training and retraining of personnel; Information Support;

♦ legal services.

A special place is occupied by the infrastructure branch for normative services, represented by organizations and institutions of the standardization, certification and metrology system. This system, ensuring the safety and quality of products should become the "foundation" of the cluster not only of the food industry, but of any other.

The country has established a Coordination Council for the development of clusters in the food industry and territorial working groups on cluster areas: grain processing - Akmola, Kostanay, North Kazakhstan regions; meat - Pavlodar; Dairy - Almaty, East Kazakhstan, Kostanay, North-Kazakhstan regions; rice - Kyzylorda region; fishing - Atyrau region; sectoral working group "Food Industry" - Almaty region; branch working group "Food Industry" - East Kazakhstan region.

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Thus, the producing (exporting) include regions in which such crucial factors of food supply are combined, as the more favorable natural conditions of agriculture and the increased amount of agricultural land per capita.

Self-sustaining regions are regions that provide the local market with the necessary food products by permissible per capita consumption norms.

The group of consuming regions are those where the natural conditions of agriculture are least favorable, or are impossible due to natural climatic and landscape conditions, and land availability is minimal.

Ensuring food security of the regions requires a combination of national and local activities. All regions, especially underfunded food, have to solve the problem of self-maintenance with low-transportable and competitive types of products: whole milk, meat, eggs. The development of interregional food supplies requires the introduction of a system of state guarantees for nonpayment risks, an increase in the productivity of industries, the possibility of developing innovative ideas on this issue [8].

Clusters can influence the competitiveness of products in three ways:

- clusters increase the productivity of firms and industries;
- clusters create opportunities for innovative and productive growth;
- clusters stimulate and facilitate the formation of a new business supporting innovation and the expansion of the cluster.

Assessment of the comparative advantages of the regions to justify the cluster approach in ensuring food security of the Republic of Kazakhstan allowed to distinguish three groups:

- the first group: regions with the greatest potential in food production - producing (exporting) basic food products (determines a sufficient intra-regional supply of food products and the establishment of lower prices than in other regions);

- the second group - regions that are self-sufficient or self-sufficient for the production of basic food products (characterized by increased market prices within the region that stimulate both production and sales of local agricultural products, as well as imports of food and agricultural raw materials from other regions of Kazakhstan);

- the third group - regions consuming (importing) or not sufficiently provided with food (partially or completely dependent on the supply of food and agricultural raw materials from other regions of Kazakhstan, high market prices for agricultural resources).

Conclusions. Thus, the cluster approach in ensuring food security assumes an obvious benefit, both from the point of view of direct economic results, and from the point of view of the transition to a more efficient relationship between the private and public sectors of the economy.

When developing clusters in ensuring food security, there is a mixture of cluster and sectoral approaches. Formed food production clusters still have more sectoral linkages (crop and livestock farming) than geographical and other clusters. In principle, such an intersection is permissible, but in this case, such signs as the geographical concentration of food industry enterprises, the system of formation of connections (vertical and horizontal), orientation to the leading enterprises will be sufficiently developed in the creation of the cluster approach [9].

The cluster approach to ensuring food security assumes an obvious benefit, both in terms of direct economic results, and in terms of moving to a more efficient relationship between the private and public sectors of the economy. On this basis, Kazakhstan's cooperation in the Eurasian Economic Union and other countries of the world that are members of other integration association will be strengthened.

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