

MAIN FEATURES OF USING FOREIGN EXPERIENCE IN FORMING AND DEVELOPING AGROINDUSTRY CLUSTERS

Abdullayev K.M.

Master's student at the University
of Economics and Pedagogy

Annotation. *This article analyzes the experience of foreign countries in the formation and development of agro-industrial clusters from an economic point of view. It highlights the formation of agro-clusters in countries such as the European Union, the USA, China, Denmark, the Netherlands, France, the UK and Brazil, their characteristics of territorial specialization, production chain, transport and logistics system, innovative technologies and market linkages. It also substantiates the possibilities of applying foreign experience in the conditions of the Kashkadarya region, in particular, the importance of natural resource potential, agro-climatic conditions, water resources, processing capacities and logistics infrastructure in the territorial organization of cotton-textile, fruit and vegetable growing and livestock clusters.*

Key words: *agro-industrial cluster, foreign experience, regional specialization, Kashkadarya region, logistics, innovation, added value chain, agriculture, competitiveness.*

Introduction. The increasing competition in the world economy, the complexity of production processes and the need for effective use of regional resources make the development of agro-industrial clusters one of the most relevant scientific and practical directions. Clustering increases the efficiency of the agricultural sector by combining production, processing, storage, logistics, marketing, research and management systems in a single territorial

and economic space. In particular, one of the main advantages of the cluster system is the fact that agricultural products are brought to the market not as raw materials, but as deeply processed, export-oriented and high-value-added products. In this regard, agro-clusters are not only a mechanism for increasing production efficiency, but also an important tool for regional development, employment generation, infrastructure improvement and innovation.

The experience of foreign countries shows that for agro-industrial clusters to function effectively, their location must be inextricably linked to natural resource potential, agro-climatic conditions, water supply, transport and logistics networks and markets. In developed countries, clusters have developed on the basis of close cooperation between research institutions, the education system, farms, processing enterprises and state administration bodies. In developing countries, clustering is considered an important direction for the modernization of the agricultural sector, industrialization of rural areas and increasing export potential. Therefore, the scientific study and adaptation of foreign experience in the conditions of the Kashkadarya region is of great importance in ensuring the territorial organization, economic efficiency and sustainable development of agro-industrial clusters.

Main part. Agro-industrial clusters are considered an important form of territorial production system in modern economic geography. The cluster approach strengthens the interaction between producers, processing enterprises, service sectors, scientific institutions and management entities located in a certain territory. The main advantage of such a system is that it organizes production processes not in a fragmented manner, but as a single territorial chain. As a result, the stages of raw material production, its processing, storage, packaging, transportation and marketing develop in an interconnected manner.

In foreign experience, the formation of clusters is largely associated with territorial specialization. For example, in the countries of the European Union,

agro-industrial clusters are often organized based on a specific type of product or the natural and geographical capabilities of the territory. In regions specializing in dairy products, meat, horticulture, greenhouse farming or winemaking, a full production cycle is formed. This deepens the territorial division of labor and increases production efficiency. The data provided indicate that 2,101 clusters operate in various sectors in 28 European countries, 11.5% of which fall within the agro-industrial complex. Millions of people are employed in these clusters, which demonstrates the role of agro-clusters in increasing regional employment and economic activity.

In the European experience, Denmark stands out as one of the leading countries in the formation of agro-industrial clusters. In this country, clusters related to livestock farming, in particular dairy production, are highly developed. Clusters such as “Milk vertical” are based on the vertical integration of production and cover processes from fodder production to the marketing of finished dairy products. Such an approach ensures the stability of production within the cluster, increases product quality and enhances competitiveness in domestic and foreign markets.

In the experiences of France, Great Britain, the Netherlands and Austria, agro-clusters develop on the basis of the integration of science, education and production. For example, in France, the Agropolis association, which is aimed at coordinating the activities of agricultural education and scientific institutions, plays an important role in expanding agricultural innovations. In the UK, innovative agro-industrial centers such as the Stockbridge Technology Center serve as a hub for research, modern technologies, and experience exchange in agriculture, horticulture, and greenhouse farming. These experiences show that agro-clusters are important not only as production entities, but also as centers for scientific and innovative development.

The effectiveness of agro-industrial clusters in foreign countries is also directly related to their connection with transport and logistics infrastructure.

Clusters are usually located in areas close to markets, ports, road and railway networks. This reduces product delivery costs, expands export opportunities, and increases the market value of products. A well-developed logistics system, especially for perishable fruits and vegetables, dairy, and meat products, is one of the main conditions for cluster effectiveness. From this point of view, in assessing the economic and geographical efficiency of clusters, their proximity to the raw material base, as well as their connection to processing plants, storage facilities, refrigeration systems, and export corridors, is also of great importance.

Another important feature of agro-industrial clusters is their close connection with innovative development. In the experience of developed countries, clusters achieve high efficiency through the introduction of digital technologies, modern agricultural technology, selection, biotechnology, environmentally friendly production and resource-saving methods. Cooperation between research institutions and producers plays an important role in this process. When scientific developments are directly applied to production, productivity increases, product quality improves, costs are reduced and export potential increases.

Foreign experience shows that agro-clusters are also an important factor in regional socio-economic development. In the regions where clusters are formed, new jobs are created, cooperation between agriculture and the processing industry is strengthened, and service sectors are developed. In the experience of Brazil, clusters specializing in soy and meat products have increased economic activity in rural areas, developed infrastructure and stabilized population incomes. Such processes will help to strengthen industrialization in rural areas and reduce interregional development disparities.

In the conditions of the Kashkadarya region, the issue of developing agro-industrial clusters is directly related to the natural resource potential of the

region, agro-climatic conditions, the share of irrigated land, labor resources and production infrastructure. The region has significant opportunities for developing clusters in the areas of cotton and textiles, fruit and vegetable growing and livestock breeding. The presence of irrigated lands, a raw material base and transport networks in districts such as Karshi, Koson, Kasbi, Chiroqchi, Muborak creates important conditions for strengthening clustering. However, in this process, it is necessary to take into account the natural, geographical and economic potential of each district or region.

In the Kashkadarya region, it is important not to directly transfer foreign experience, but to adapt it to local conditions. For example, it is necessary to introduce water-saving technologies in areas with limited water resources, increase the number of cold storages and logistics centers in areas specializing in fruit and vegetable growing, and increase the level of deep processing of raw materials in cotton-textile clusters. Strengthening the fodder base in livestock clusters and regional coordination of meat and milk processing enterprises are important. The text also notes that the natural resource potential, regional specialization, and the harmonious development of clusters in foreign countries with transport and logistics networks are important experiences for Kashkadarya.

Territorial planning plays a special role in the development of agro-clusters in the regional context. Clusters should not be randomly located, but should be organized based on agro-climatic zones, water resources, land, labor resources, processing enterprises, and markets. Such an approach reduces production costs, increases product quality, and serves to reduce economic disparities between regions. Promoting cluster initiatives, especially in remote areas, will increase employment among rural residents and strengthen local economic activity.

The formation of a value chain is an important strategic task in the development of agro-industrial clusters. If the product is sold only as raw

materials, the region loses a significant part of its economic benefits. On the contrary, if the raw materials are processed, packaged, branded and exported, high added value is created in the region. This not only increases the income of cluster participants, but also has a positive impact on local budget revenues, employment and the development of the service sector.

In the development of agro-industrial clusters in the Kashkadarya region, it is also necessary to strengthen cooperation with research institutions and higher education institutions. Foreign experience shows that successful clusters do not consist only of farmers and enterprises, but are supported by scientific advice, personnel training, innovative technologies and a marketing system. Therefore, it is important to scientifically substantiate the activities of agro-clusters in the region, provide them with geographic information systems, digital monitoring, and methods for assessing water and land resources.

Also, the environmental aspects of clustering should not be ignored. Intensive agricultural production can affect water resources, soil fertility and ecological balance. Therefore, it is necessary to adapt the “green technologies”, water-saving irrigation methods, organic production, waste-free technologies and ecological certification systems, which are widely used in foreign experience, to the conditions of Kashkadarya. This will ensure the long-term sustainability of clusters.

In general, agro-industrial clusters serve as an important mechanism for accelerating regional economic development, deep processing of agricultural products, increasing export potential and creating new jobs in rural areas for the Kashkadarya region. Based on foreign experience, when developing clusters, factors such as natural resource potential, regional specialization, logistics, innovation, connectivity with markets and environmental sustainability should be comprehensively taken into account. It is these factors that determine the economic and geographical effectiveness of clusters.

Conclusion. Foreign experience in the formation and development of agro-industrial clusters shows that clusters are an effective means of improving the regional production system in a modern agrarian economy. In the experience of the European Union, Denmark, the Netherlands, France, Great Britain, China, the USA and Brazil, agro-clusters have developed on the basis of natural resource potential, regional specialization, transport and logistics infrastructure, innovative technologies and integration with markets. Such an approach serves to reduce production costs, increase product quality, expand the value chain and strengthen regional competitiveness. In this regard, the study of foreign experience serves as an important methodological basis for the scientific development of agro-industrial clusters in the conditions of Uzbekistan, in particular, the Kashkadarya region. In the development of agro-clusters in the Kashkadarya region, it is necessary to adapt foreign experience to local economic and geographical conditions. In the formation of cotton-textile, fruit and vegetable growing and livestock clusters in the region, agro-climatic zones, irrigated lands, water resources, processing enterprises, logistics centers and labor resources should be thoroughly analyzed. The location of clusters based on territorial planning, strengthening the integration of science and production, production of export-oriented products and the introduction of environmentally sustainable technologies will increase the agro-economic potential of the region. Therefore, the scientific assimilation of foreign experience and its application in accordance with local conditions are important conditions for the sustainable, innovative and competitive development of agro-industrial clusters in the Kashkadarya region.

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