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MECHANISMS FOR ORGANIZATION AND IMPROVEMENT OF AGROINDUSTRIAL CLUSTERS IN KASHKADARYO REGION FROM A REGIONAL ASPECT

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Abstract: *This article analyzes the mechanisms for the effective territorial organization of agro-industrial clusters in the Kashkadarya region. The study examines the placement of clusters based on the region's geographical, climatic, and resource potential, as well as ways to enhance their internal integration and socio-economic efficiency. Additionally, the importance of territorial planning, the introduction of innovative technologies, logistics infrastructure, and collaboration with local producers in the development of agro-industrial clusters is analyzed. The research results contribute to formulating strategic recommendations for the sustainable development and increased economic efficiency of the agro-industrial sector in the Kashkadarya region.*

Keywords: *Kashkadarya region, agro-industrial cluster, territorial organization, economic-geographical analysis, regional development, logistics, innovative technologies.*

Introduction. In the global economy, agro-industrial clusters are recognized as an important tool for regional development. The experience of developed countries shows that centralizing agricultural processing, logistics, and marketing systems can help unite producers, increase resource efficiency, and enhance regional specialization. At the same time, when clusters are established economically and geographically, taking into account the natural

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resources, transport infrastructure, and labor potential of the regions, they increase the opportunity to produce competitive products and enter the domestic and foreign markets. In global practice, especially in European and Asian countries, agro-industrial clusters play an important role in regional integration, innovative development, and increasing export potential.

The strategy for developing agro-industrial clusters in Uzbekistan is being implemented based on the economic and geographical characteristics of the country. Interregional specialization, efficient use of land and water resources, the formation of clusters taking into account transport, geographical convenience, and labor potential serve to increase production efficiency. There is also an opportunity to increase the competitiveness of clusters by introducing innovative technologies, developing logistics infrastructure, and strengthening integration with local manufacturers. Therefore, the mechanisms for the territorial organization of agro-industrial clusters in the conditions of Uzbekistan require a thorough economic and geographical analysis.

Kashkadarya region is rich in agricultural resources in terms of territorial and economic development and has favorable conditions for creating clusters. The natural resources, climatic conditions, land and water reserves, and transport geographical location of the region's mountainous and foothill zones allow for regional specialization. At the same time, the issues of unifying manufacturers in the region, optimizing the logistics system, introducing innovative technologies, and territorial planning remain relevant. Therefore, the topic of mechanisms for the effective territorial organization of agro-industrial clusters in the Kashkadarya region is of great importance not only from a scientific but also from a practical point of view, and serves as an important factor in forming a strategy for the sustainable socio-economic development of the region.

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Main part. When analyzing the territorial location of agro-industrial clusters in the Kashkadarya region from an economic and geographical point of view, they can be considered in the context of three main regions - mountainous, foothill and plain districts. As examples of mountainous and foothill regions, the districts of Shahrisabz, Kitab, and Yakkabag stand out. The mountainous terrain, fertile land, and irrigation opportunities of this region allow the formation of clusters as centers for the cultivation and processing of fruits, vegetables, grapes, and other agro-industrial products. Clusters in mountainous areas are usually small in size, with internal integration and transportation systems specially designed, as the mountainous terrain creates constraints on infrastructure creation. At the same time, clusters in mountainous areas will also be environmentally sustainable and have the opportunity to meet domestic market demand by bringing together local producers.

The effective functioning of agro-industrial clusters in mountainous, foothill, and plain regions is primarily related to the specialization of the regions. For example, Shahrisabz district specializes in growing fruits, vegetables and grapes in the mountainous area, Kitab district focuses on growing grains and vegetables in the plain area, and Yakkabog district focuses on producing fruits and other high-value-added products in the foothill zone. Specialization allows for effective management of product flows within the cluster, optimization of processing plants and storage facilities, and maximum use of regional resources. At the same time, the fact that each district specializes in products suited to its natural resources and climatic conditions strengthens inter-cluster integration at the regional level.

The effective use of labor resources in economic and geographical terms is of great importance in increasing the efficiency of agro-industrial clusters. In mountainous areas, particularly in the Shahrisabz and Yakkabog districts, the population's experience in agriculture makes it possible to direct the workforce

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to processing, growing, and logistics activities within the cluster. In lowland areas, such as the Kitab district, labor is more involved in irrigation of large areas and industrial production processes. In this way, labor resources, combined with the natural and social resources of the regions, ensure the sustainable functioning and economic efficiency of clusters.

Increasing the efficiency of agro-industrial clusters and improving them regionally requires a number of scientific and practical solutions. In developing clusters in mountainous, foothill, and plain regions, it is important to improve transport and logistics infrastructure, introduce water-saving irrigation systems, apply innovative technologies, and improve territorial planning. Clusters will also be economically and geographically stable and competitive by uniting local producers, coordinating the flow of resources across the region, and optimizing inter-district specialization. This will make the territorial location and activities of agro-industrial clusters in the Kashkadarya region more efficient and integrated.

The Togaldi zone includes the districts of Guzar, Dehqanabad, Kamashi, Kokdala, and Chiraqchi. These areas are located between mountains and plains and are rich in irrigated land and resources. Therefore, clusters in these regions will be focused on growing grains, vegetables, and fruits, with the possibility of integrating them with processing and storage enterprises. The clusters of the foothill zone are located in transport-geographically favorable areas, close to regional centers and main roads, which helps to effectively manage the flow of products. The region's climatic and land resource characteristics allow for the optimization of production models within clusters and enhanced collaboration with local producers.

The effective functioning of clusters in the foothill zone is associated with the specialization of the regions. For example, the Guzar and Dehqanabad districts specialize in growing grain and vegetables, meat and dairy products,

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while the Kamashi, Chiroqchi, and Kokdala districts specialize in growing melons, grain, and cotton. This specialization allows for optimization of product flows within clusters, centralization of processing and storage enterprises, and efficient allocation of resources across the region. At the same time, each district's specialization in product types suited to its natural resources strengthens interregional integration and increases intercluster competitiveness.

The effective use of labor resources in mountain zone clusters is an important factor in increasing economic efficiency. Most of the population in the area has agricultural experience, and the workforce can be directed to the cultivation, processing, and logistics processes within the cluster. At the same time, the relatively large size of irrigated areas allows for the effective distribution of labor and optimization of production processes. As a result, foothill clusters not only increase production volumes, but also improve product quality and speed of delivery to domestic and foreign markets.

A number of scientific and practical solutions are needed to improve the clusters of the mountain zone. In particular, it is important to develop transport and logistics infrastructure, introduce water-saving irrigation systems, use innovative technologies, and improve territorial planning. At the same time, by uniting local producers and harmonizing inter-district specialization, clusters become economically and geographically stable and competitive. This will increase the production efficiency of foothill clusters, coordinate the flow of resources within the region, and further strengthen the agro-industrial potential of the Kashkadarya region.

The plain zone includes the districts of Karshi, Kasbi, Koson, Mubarak, Mirishkor, and Nishon. Since these regions have limited water resources, cluster development requires a special approach. In particular, clusters will be established based on the introduction of innovative water-saving technologies,

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the production of high-value-added products, and special logistics solutions. Lowland clusters are located close to strategic transport routes, ensuring resource exchange and interregional integration across the region. Thus, the plain area will serve to ensure the effective functioning of agro-industrial clusters and strengthen economic integration within the region.

The effective functioning of agro-industrial clusters in the lowland zone is associated with the specialization of the regions. All districts in this zone have almost the same specialization, namely, they specialize in growing cotton and grain. This specialization allows for optimization of product flows within clusters, centralization of processing and storage enterprises, and efficient allocation of resources across the region. At the same time, each district specializes in product types that match its natural resources and production capabilities, which strengthens inter-cluster integration at the regional level.

The effective use of labor resources in clusters in the plain zone is important for increasing the economic efficiency of the region. In areas with limited water resources, particularly in the Koson, Mirishkor, and Mubarak districts, the workforce will be focused on innovative irrigation technologies, the production of high-value-added products, and specialized logistics processes. At the same time, the limited availability of irrigated areas requires efficient distribution of labor and optimization of production processes. As a result, lowland clusters not only increase production volumes, but also improve product quality and delivery efficiency to domestic and foreign markets.

Improving clusters in the plain zone requires a number of specific economic, geographical, and scientific and practical solutions. In particular, it is necessary to introduce water-saving irrigation systems, develop transport and logistics infrastructure, widely use innovative technologies, and optimize territorial planning. Also, by strengthening the system of inter-district integration and resource exchange, the clusters of the plain region will become

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economically and geographically stable and competitive. This will increase the efficiency of agro-industrial production within the region and strengthen the overall socio-economic potential of the Kashkadarya region.

Conclusion. Thus, the territorial location of agro-industrial clusters in the Kashkadarya region is carried out in accordance with natural resources, transport and geographical opportunities, and the economic and geographical potential of the districts. Each region - mountainous, foothill, and plain - has its own unique resource potential, climate, and production capabilities, requiring specific economic and geographical solutions for the location of clusters. Taking into account inter-regional and inter-district differences, regional clusters increase the ability to use resources efficiently, strengthen integration with domestic and foreign markets, and produce competitive products. As a result, the Kashkadarya region can become a center of sustainable development and competitiveness in the agro-industrial sector.

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