

**STRATEGIC APPROACHES TO ESTABLISHING FRUIT AND
VEGETABLE CLUSTERS AND ENHANCING THEIR ORGANIZATIONAL-
ECONOMIC MANAGEMENT MECHANISMS**

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Abstract. This article examines the issues of globalization, enhancing the competitiveness of the Uzbek economy, and clustering the agricultural sector. The economic efficiency of implementing the cluster model in agriculture is analyzed through the experience of foreign countries (the USA, Sweden, and India), as well as contemporary digital indicators within the fruit and vegetable sector of the republic. The research highlights the mechanisms for organizing fruit and vegetable clusters, establishing deep processing value chains, optimizing production costs, and ensuring rural employment.

Keywords. Cluster, fruit and vegetable sector, organizational-economic mechanism, integration, competitiveness, infrastructure, value chain, agrologistics, export potential.

In the global economy, qualitatively new transformations are occurring due to globalization processes, developmental imbalances, and intensifying interstate competition. Transforming the economy of Uzbekistan into an equal and competitive participant in the world market constitutes one of the most pressing contemporary tasks. Concurrently, introducing modern innovations into the agricultural sector and increasing the domestic processing level of local raw materials are imperatives of our time. This is because the further the agricultural sector is industrialized, the more the state's economic

power and export opportunities expand, which, in turn, elevates the population's quality of life and welfare to a higher level.

In recent years, particular emphasis has been placed in Uzbekistan on shaping an infrastructure reliant on advanced technologies, as well as integrating the cluster model into agriculture. The development of cluster structures, modern greenhouses, and household plots has facilitated not only an increase in crop yields but also a significant improvement in the income levels of the rural population. Within a short period, this innovative organizational form has become the primary driving force behind agricultural development. For this reason, various forms of integration among enterprises across economic sectors—specifically clusters—hold distinct significance today. Utilizing the cluster approach in economic management is considered one of the most effective paths toward enhancing competitiveness. Currently, this method is widely applied in numerous countries worldwide. Foreign experience demonstrates that clusters already play a leading role in various industries. Notably, 32 percent of private-sector workers in the USA and 39 percent of the employable population in Sweden operate within clusters, while in India, more than 60 percent of the total export volume is attributed to clusters.

To this end, the Head of Our State proposed the cluster reform and emphasized that this system constitutes the most reliable path toward leading agriculture and other sectors toward high efficiency and sustainable development. As a result of large-scale measures implemented in this direction in recent years, a harmony of interests between commodity producers and processors has been ensured. Within the framework of agricultural sector reforms in Uzbekistan, over 200 fruit and vegetable clusters operate to date. The republic produces more than 23 million tons of fruit and vegetable products annually. Specifically, 55 districts in the republic are specialized in fruit and vegetable cultivation. The total annual export value of fruit and vegetable products amounts to

approximately 1.5 billion dollars. Notably, 70–80 percent of the total fruit and vegetable production in the country is attributed to smallholder and peasant farms integrated into these clusters.

Cluster participants demonstrate active initiatives in resolving long-standing sector-specific issues by introducing industrial activities into rural areas. Most importantly, this model has fully ensured population employment, providing rural citizens with stable year-round work and a regular monthly salary. In other words, clusters have assisted farmers and agricultural practitioners in adopting modern working methods, as well as increasing productivity and income. Indeed, every individual strives for a quality life and sustainable prosperity, laboring continuously to advance both personal interests and national development.

Within the cluster structure, landowners, finished product manufacturers, fertilizer supply enterprises, and service-providing organizations are firmly linked economically, geographically, and logistically. They are directly invested in mutual cooperation, wherein the success of one participant establishes the foundation for the prosperity of others.

Under the cluster system, farms, enterprises, and institutions operate as a unified team across all stages, ranging from raw material cultivation to finished product manufacturing and market commercialization. Such integration facilitates the optimization of production costs and a substantial increase in revenues.

The primary objective of implementing the cluster model in the agriculture of Uzbekistan is to transition the agrarian sector from a raw material supply stage toward deep processing and industrialization, thereby reducing production costs and maximizing profits. The practical outcomes of this approach include the following:

1. Processes encompassing raw material cultivation, logistics, warehousing, processing, and sales are controlled by a single entity. Consequently, production costs decrease while high quality standards are maintained.

2. Due to the formation of a continuous production chain between enterprises and farms, various expenses and losses are minimized, and the issue of raw material shortages is entirely resolved.

3. The integration of industrial technologies into rural areas enables the population to acquire modern production skills. This creates a favorable foundation for the emergence of innovative solutions within the rural environment.

4. New jobs will be created in rural areas and the employment rate will increase significantly.

5. The continuous and sustainable operation of all participants in the cluster is guaranteed.

6. The cluster model swiftly adapts to shifting external conditions and contributes effectively to resolving regional socio-economic challenges.

7. Collaboration among specialists from diverse fields is enhanced, serving as a robust foundation for transitioning the national economy toward an innovative development path.

Concurrently, the creation of fruit and vegetable clusters in our country is recognized as a vital factor driving the sector toward a new stage of development. Along with the formation of this innovative production model, the necessity to improve the cluster management system is also emerging. To ensure the sustainable operation and high performance of fruit and vegetable clusters, clear solutions must be found for pressing issues, such as: what functions and tasks their management mechanism should execute, how the interests of participants are to be coordinated, and through what regulatory frameworks economic cooperation between the state and the cluster should

be established. This, in turn, requires a scientific justification for the agricultural development strategy, particularly in fruit and vegetable cultivation. These strategic objectives indicate the appropriateness of expanding the scope of scientific research dedicated to forming the cluster system in fruit and vegetable production and exploring its development pathways. Furthermore, within the framework of organizing fruit and vegetable clusters and optimizing their effective management, defining and executing tasks along the following trajectories holds distinct significance:

- Developing a program of incentive measures that comprehensively accounts for the interests of participants, strengthens mutual cooperation, and serves to enhance value addition within the cluster;
- Further improving the organizational and economic mechanisms for managing fruit and vegetable clusters;
- Explicitly defining the structure of the cluster management company (the leading enterprise), as well as its core tasks and functions;
- Regulating and optimizing contractual and legal relations among cluster members;
- Expanding economic cooperation between fruit and vegetable clusters and the state, thereby ensuring the further refinement of tax, credit, customs, and export-support mechanisms.
- The formation of an effective management system in agriculture not only fosters cluster development but also assists in thoroughly eliminating existing deficiencies within the sector. One of the paramount functions of managing fruit and vegetable clusters is planning, the most critical stage of which entails the precise definition of cluster goals.

It is well known that the goals of clusters, operating as multi-tiered systems, are comprehensive and multifaceted. The primary objective of these systems is formulated

through the functions they execute. It is precisely these functions that systematically reflect the current status of the cluster and define the paths toward achieving goals and strategies at each organizational stage. The organizational structure of the cluster is developed in accordance with these goals. Each cluster shapes its structure based on its internal capabilities, where every division and structural component contributes to the achievement of the common objective. In general, creating a modern management structure constitutes one of the fundamental requirements and criteria of effective management today.

In optimizing the management mechanism of fruit and vegetable clusters, particular attention must be devoted to organizational and economic aspects. In this regard, it is expedient to implement the development of the organizational and economic mechanisms of clusters along the following trajectories:

- Identifying all factors influencing operations, defining their scope of impact, planning cluster activities within short- and long-term perspectives, and establishing optimal economic relations among participants while fully preserving their operational and legal independence;
- Regulating mutual settlements among organizations within the cluster, and introducing state incentive measures that account for the rights and obligations of the participants;
- Establishing effective distributive relations that ensure cluster development, harmonizing long-term system perspectives with the interests of each entity during income distribution, and structuring contractual relations in accordance with the contribution levels and development potentials of the participants.

Organizational and economic aspects hold substantial importance in cluster management; this process requires strengthening cooperation among participants, assessing their current status, and accounting for future development dynamics. To

achieve these goals, the following measures must be implemented: analyzing the current state of the fruit and vegetable sector at national and regional levels and forecasting future development trends; explicitly defining the core objective of establishing the cluster and aligning the goals of all participants with this direction; developing a general development model for each participant and the cluster as a whole, while defining its key indicators; and continuously monitoring the impact of sector activities on the environment and ecology.

The organizational and economic mechanisms of cluster management are primarily aimed at effectively incentivizing cooperation among producers during the cultivation, storage, processing, and commercialization of fruit and vegetable products.

Today, fruit and vegetable clusters operating in Uzbekistan primarily possess either a single-sector economic specialization (horticulture, viticulture, vegetable production, or greenhouse farming) or a multi-sector specialization (encompassing several regions). The formation of their management mechanisms is being carried out along two main directions:

- The first direction: optimizing clusters organized on the basis of a single enterprise or a group of interconnected enterprises that independently manage all processes from fruit and vegetable cultivation to sales;
- The second direction: establishing a product procurement system based on guaranteed contracts with fixed prices and terms between processing enterprises, exporters, and agricultural producers, including the supply of seeds, seedlings, and advance payments. This direction entails optimizing cluster activities that encompass the entire "seed/seedling cultivation–harvesting–storage–processing–transportation–market delivery" chain.

The management of fruit and vegetable clusters is also directly linked to innovative technologies and technological cooperation relations. The primary criteria determining the organizational form of a cluster include:

- The complexity of the structure and the intensity of interaction among participants (weak, moderate, strong, very strong);
- The integration level of modern innovative technologies and the presence of close technological linkages;
- The operation of the cluster based primarily on the principles of self-organization and self-management.

Self-management and self-organization processes are shaped on the basis of concrete economic interests, the essence of which is determined by innovative technologies and the technological interdependencies arising from them. Chain activities aimed at developing cluster operations create conveniences and benefits not only for the participants but also for the regional and national economies. Therefore, studying the experience of advanced foreign countries and analyzing the regulatory and legal documents adopted regarding agricultural development in our republic hold distinct significance. Based on these foundations, it is expedient to take the following measures in developing fruit and vegetable clusters: diversifying agriculture and accounting for the natural-climatic conditions of the regions; cultivating high-yielding and export-oriented varieties; integrating modern technologies into the processes of manufacturing cheap and competitive products, as well as their storage, processing, and export; creating new jobs; incentivizing the financial interests of participants; and integrating cultivation and processing processes into a unified system. When necessary, it is also important to develop and implement ecological measures aimed at improving the state of the environment.

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