

THE CLUSTER APPROACH IN AGRICULTURE: ORGANIZATIONAL
MECHANISMS AND DEVELOPMENT STRATEGY FOR THE FRUIT AND
VEGETABLE SECTOR

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<https://doi.org/10.5281/zenodo.20021414>

Annotation. The article covers the volume of agricultural products and their exports, which form the basis for the development of agriculture in the agricultural sector of Uzbekistan. At the same time, the structure of fruit and vegetable clusters, the specialization of their activities, and the main principles of cluster activity are highlighted.

Keywords. Agricultural sector, agriculture, import, foreign trade, fruit and vegetable, cluster, specialization.

Fruit and vegetable production is not only an industry that ensures food security but also one of the strongest pillars of the economy. Furthermore, fruits and vegetables are the primary source of vitamins, minerals, and fiber necessary for the human body. Experts state that a sufficient amount of fruits and vegetables in the daily diet boosts immunity and prevents many chronic diseases. From an economic perspective, this sector creates thousands of jobs and ensures the inflow of foreign currency into the country by increasing export potential.

With its sunny climate and fertile soil, Uzbekistan is known as a destination for growing the world's most delicious and vitamin-rich products. Today, fruit and vegetable growing has become not only a sector that ensures food security but also one of the most dynamically developing drivers of our national economy. In the national economy, comprehensive measures are being implemented aimed at developing and expanding production in the agricultural sector, as well as the storage, processing, and export of fruit and vegetable products. At the same time, in order to further increase productivity and labor productivity in the agricultural sector, the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030 was adopted, and this document serves as a program for the development of agriculture. In particular, by 2025, it is planned to increase the country's gross domestic product to 100 billion dollars and annual exports to 30 billion dollars, and it is shown that there are great reserves and opportunities in the agricultural sector to achieve these indicators. To achieve this goal, comprehensive measures aimed at the systematic organization of agricultural product exports, which serve as the foundation for agricultural development, have been implemented at an accelerated pace.

In particular, the agricultural sector of Uzbekistan occupies a leading position in the region: that is, the volume of gross agricultural output in Uzbekistan is 35.1 billion US dollars. In Kazakhstan, it amounted to 17.3 billion US dollars, in Tajikistan - 6.8 billion US dollars. US dollars and Kyrgyzstan amounted to 4.5 billion US dollars, which is higher than the indicators of production in Uzbekistan, which reflects its scale and strategic importance. According to World Bank data, the value added per person employed in agriculture in Uzbekistan is 4.4 times higher than the global average, which amounted to 17,602.1 US dollars. Furthermore, the global average value added per person employed in agriculture was 4,012 US dollars, which is significantly higher than the global average.

In 2025, fruit and vegetable production in Uzbekistan amounted to more than 12.5 million tons. Vegetables accounted for 9.9 million tons, and fruits and berries for 2.6 million tons. In 2025, the total volume of fruit and vegetable exports from Uzbekistan amounted to 2.2 million tons, reaching a value of 2.1 billion USD. This is a significant increase compared to 2024.

Exports also included fruits and berries - 628.5 thousand tons, vegetables - 582.5 thousand tons, watermelons and melons - 233.6 thousand tons, mung beans and nuts. The share of exports in total exports in 2025 amounted to 6.3% of Uzbekistan's total export revenue.

One of the intersectoral and regional integrated structures of particular importance in ensuring the stability of the agricultural sector is agro-clusters. Our country possesses all the opportunities for the further development and formation of this sector. Today, the development of clusters is one of the most important tools that contribute to sustainable innovative development and the competitiveness of agriculture in the region, as well as the development of the agro-industrial complex as a whole. For the accelerated and innovative development of fruit and vegetable growing in our country, the formation of fruit and vegetable clusters is being implemented in two directions:

The first direction is a cluster for organizing the production of fruit and vegetable products within a single or group of interconnected enterprises that independently carry out the specified process from production to sale.

The second direction consists of a cluster for organizing the production of fruit and vegetable products, which forms a continuous chain based on the principle of "seed - seedling - production - preparation - storage - processing - transportation - delivery to the market" based on guaranteed contracts between agricultural producers, procurement enterprises, processors, and exporters who provide agricultural producers with planting material and advance payments for organizing agricultural work and purchase their products at agreed prices.

Fruit and vegetable clusters include the following tasks:

- deep specialization in the production, storage, processing, and sale of fruit and vegetable products;
- introduction of new innovative technologies in the cultivation, reception, cleaning, sorting, drying and processing of fruit and vegetable products;
- land use: effective and productive use of allocated land areas, placement of high-quality, export-oriented fruit, grape and vegetable crops in accordance with world standards, gradual placement of fruit, grape and vegetable crops instead of inefficient and unpromising agricultural crops;
- studying advanced foreign experience in fruit and vegetable cultivation, their widespread use in regional and territorial conditions, and attracting foreign specialists to the fruit and vegetable industry;
- cultivation of export-oriented agricultural products, their selection and seed production in cluster territories, development, establishing cooperation with research institutions;
- formation of a system that fully covers the process of planting high-yielding fruit, grape, and vegetable crops, production, storage, processing, and sale of products, as well as the introduction of modern innovative, resource-saving technologies for fruit and vegetable production;
- the creation of new skilled jobs.

The creation of fruit and vegetable clusters is carried out by concluding a tripartite agreement between the Ministry of Agriculture, the local government body, and the initiator. The founders of a cluster may be: foreign and local investors; enterprises for the procurement, storage, transportation, and processing of fruit and vegetable products and grapes that have stable economic ties and advanced production technologies; and other legal entities whose participation in the creation of clusters is not prohibited by law.

A fruit and vegetable cluster is created by its participants on a voluntary basis. When establishing a fruit and vegetable cluster, its founders retain their independence. Fruit and vegetable clusters are commercial organizations and may be established in any organizational and legal form provided by law, including in the form of joint ventures with a foreign investor.

Within a fruit and vegetable cluster, units for the cultivation, storage, transportation, procurement, marketing of fruit and vegetable products, scientific support, etc., may be established. One of the main features is that state bodies and their officials do not have the right to interfere in the activities of a fruit and vegetable cluster carried out in accordance with the law.

The formation and organization of the fruit and vegetable cluster's activities are carried out in compliance with the following basic principles:

- fruit and vegetable clusters are created on a voluntary basis by foreign investors or local entrepreneurs. At the same time, the founders may include enterprises and scientific centers for the processing, procurement, storage, packaging, transportation, and sale of fruit, vegetable, and grape products that have stable economic ties and advanced production technologies, as well as those located in the immediate vicinity.

- the interaction of agricultural producers with the fruit and vegetable cluster is carried out on the basis of contracts concluded between them, and the rights and obligations of the parties are regulated in the contract.

- including the provision of at least 40 percent of the delivered products in advance, as well as the subsequent guaranteed purchase of products.

- agricultural products grown in excess of the contract will be freely disposed of by commodity producers, including by additional agreement, they can be sold to the fruit and vegetable cluster.

The fruit and vegetable cluster is organized in the following areas of industry specialization:

1. **Horticulture** - based on intensive horticulture and the application of drip irrigation technology, as well as specialized in the cultivation of fruits, nuts, citrus fruits, and perennial products;

2. **Viticulture** - specialized in the intensive cultivation of table and/or industrial grape products using drip irrigation technology;

3. **Vegetable growing** – specialized in the cultivation of annual vegetables, legumes, herbs, and other agricultural crops not prohibited within the territory of the republic;

4. **Greenhouse** - specialized in the use of greenhouse complexes for growing agricultural products;

5. **Multidisciplinary** - operates on the basis of specialization in more than one of the aforementioned areas.

Particular attention should be paid to the organizational and economic mechanisms for the development of fruit and vegetable clusters. Therefore, it is advisable to develop the organizational and economic mechanisms of clusters in the following areas:

- identify all influencing factors and define their scope of influence;
- planning the activities of clusters for current and long-term periods, establishing the most proportional proportions and relationships between all participants. At the same time, it is necessary to ensure their full economic and legal independence;

- proper organization of mutual settlements between departments and organizations within the cluster. At the same time, to prevent the violation of their rights and, on the contrary, to take measures to protect and support them;

- establishing mutually beneficial distribution relations to ensure the development of clusters in the fruit and vegetable sector; taking into account only the prospects for cluster development when allocating funds received. At the same time, taking into account the interests of economic entities within the cluster;

- proper establishment of contractual relations between entities in the fruit and vegetable cluster. At the same time, it is important to take into account the contribution of each party and the level of development.

In fruit and vegetable clusters, it is important to regularly perform the following tasks:

- increasing the level of merchantability of products grown in fruit and vegetable clusters;
- increasing the production volume of fruit and vegetable products and focusing on standardization and certification processes in accordance with quality requirements;
- widespread establishment of a logistical transport system for delivering products grown in fruit and vegetable clusters to global markets and consumers;
- implementation of modern management methods and the use of innovations in the management of fruit and vegetable clusters;
- To develop and increase the efficiency of fruit and vegetable clusters, it is first necessary to conduct a SWOT analysis of the farm.

Based on the effective resolution of the aforementioned tasks, it will ensure the development of fruit and vegetable clusters and make a significant contribution to improving the welfare of the republic's population through the extensive use of the country's food potential, particularly in the fruit and vegetable industry.

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