

# The Role of Fruit-Vegetable Cluster-Cooperative in Ensuring Food Security in Uzbekistan

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**Abstract:** In this article, the economic importance of the fruit-vegetable cluster-cooperative and its role in providing the country's population with food is based on its relevance. The main goal of the research is to provide industrial enterprises with raw materials through the use of the cluster cooperation system in the production of fruit and vegetable products. In the conducted scientific research, scientifically based suggestions were given on mechanisms of state support for fruit and vegetable growers in the Republic of Uzbekistan, regulation and organization of agroclusters by the state. At the same time, the economic indicators of fruit and vegetable growers were analyzed on the basis of cluster cooperation, and the growth rate of fruit and vegetable cluster cooperation "Panji Kishmishzorlari" in Kitab district, Kashkadarya region of the country in 2010-2020. It is based on the fact that the growth is 130.9%, and the cultivated area has increased by 156.8% for this object. As a result of the stable growth of the cluster-cooperation of fruit and vegetable products of our country, proposals and recommendations have been developed to ensure food safety and provide the population with ecologically clean products by improving the fruit and vegetable industry. At present, practical proposals have been made for the establishment and development of fruit and vegetable cooperation in the field of vegetable growing and fruit and vegetable growing. This scientific research work reveals how to improve the scientific level of farmers and peasant farms and effectively use the experiences of foreign countries in the development of fruit-vegetable cluster-cooperation. As a result of this, the issues of putting the product on the market through economic stimulation of fruit and vegetable producers and development of the market infrastructure and learning experience from scientific research institutes were highlighted. Ways to increase the economic efficiency of fruit and vegetable cultivation, ways to develop fruit and vegetable cluster cooperation in the future are scientifically based.

**Keywords:** Cluster Cooperation, Cooperative, Fruit and Vegetable, State Support, Economic Efficiency, Mechanisms, Competitive Product

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## 1. Introduction

The future development of the economy of Uzbekistan, including the fruit and vegetable sector, is directly related to the processes of globalization and integration into the world economy, and this integration causes the problem of international competition. The tightening of domestic demand in the country puts fruit and vegetable producers in a more difficult position. As a result, product suppliers compete with foreign competitors in two ways: to maintain their positions in the domestic market and to enter a new foreign market.

In the Republic of Uzbekistan, fruits and vegetables are

mainly grown in the private sector, and farms and farms, today an increase in the number of large-scale horticultural enterprises leads to increased competition between private farms of the horticultural industry own 75-85 percent of them. In such a system, there are a large number of vegetable products that ripen seasonally and in many cases inconvenient for transportation. In order for small farmers and farms to participate in competition, it is important for them to join the cluster cooperation.

Decree of the President of the Republic of Uzbekistan dated October 23, 2019 No. PD-5853 "On approval of the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030" [1], as well as "Measures for

the development of agricultural cooperation in the field of fruit and vegetable production" dated March 14, 2019 Presidential resolution PR-4239 [2] provides for the creation of specialized cooperatives on the basis of farms and peasant farms operating in regions with developed fruit and vegetable production and increasing their efficiency.

Also, Presidential Resolution No. PR-4549 dated December 11, 2019 "On additional measures for the further development of the fruit and vegetable and viticulture industry and the creation of a value chain in the industry" [3] on production, storage, processing, etc. is the need to introduce advanced technologies in the field of sales and stimulate the development of cluster cooperation between manufacturers of these products and improve their efficiency.

On this occasion, in the implementation of the tasks defined in other regulatory legal documents related to this activity, in order to strengthen the country's food security, improve the quality of food products, create conditions for improving the system of trade in products, organizing production in agriculture and cluster production of products - organization, based on the principle of cooperation, is becoming more widespread in the world.

## 2. Literature Review

The concept of a cluster was introduced for the first time by M. Porter, who introduced the cluster with the essence of "a rhombus of national competitive advantages" in relation to industries and companies. Along with a number of familiar concepts that represent a cluster, i.e. "...geographically adjacent companies and related organizations, in the same field and with common activities and complementary groups", the following concepts are presented [4].

Many foreign scientists, in particular, Russian economist A. V. Chayanov, describe the economic essence of cooperation as a relationship that ensures the common economic interests of economic entities that combine their activities independently. The economist mentioned that the main attention here should be focused not on property, but on serving the interests of integration into cooperative relations.

According to A. V. Chayanov, "Capital is not the boss in a cooperative, but rather a servant. It is emphasized that the cooperation should help the farmer not only to ensure profit, but also to improve his knowledge and skills" [5].

It is shown that the basis of the important economic essence of cooperation is the principle of free subjects to join the cooperation, democracy in the management of cooperative relations, and the principle of economic justice in the distribution of the profit obtained as a result of cooperation. Even today, in the tariff given by A. V. Chayanov to the essence of the agricultural cooperation, the cooperative's producers of small goods in agriculture, without losing their status as an independent economic entity with their own balance sheet, together more the fact that it is a question of cooperation for the sake of economic efficiency has not lost its importance. Among economists, the economic essence of cooperation has been given different rates. For

example, I. N. Buzdalov, "Cooperation is the joint activity of various economic entities, which combines personal, collective and social interests, and stimulates the creative work of individuals. At the same time, together with the social guarantee of a person, it provides social protection" [6].

Also, M. I. Tugan-Baranovsky [7] focused on the forms of cooperation and the social aspects of the cooperation process and interpreted it as a social movement, while A. V. Chayanov researched the economic aspects of cooperation in his work, focusing on small producers of goods. and the economic and social nature of cooperation is interpreted from the point of view of that time.

It is shown that the material and technical base of small individual farmers' farms is very weak, and the low level of marketability of products has led to the fact that farms operate more as social subjects than economic ones and is an obstacle to the process of cooperation. According to R. Kh. Ergashev, an economist studying the general problems of fruit and vegetable cooperatives in Uzbekistan, agricultural cooperatives are organized by producers of agricultural goods to meet their economic and other needs. the system of agricultural cooperatives and their partners. "Agricultural cooperative is one of the organizational and legal forms of running an economy. It involves meeting the material and other requirements of cooperative members by producers of agricultural goods. In our opinion, the tariff "[8] refers to cooperative production and other economic activities based on the integration of share contributions" [8].

Fruit and vegetable cooperative is a system of agricultural cooperatives and their partners established by producers of agricultural goods to meet their economic and other needs.

Economist R. H. Husanov researched the economic content and nature of cooperation in his scientific works, "The main attention was focused on the producers of small goods, and he thought about the socio-economic content of cooperation from the point of view of that time." [9].

In the course of research, several scientists gave their opinions on the economic nature of cooperation. For example, it is given by A. I. Allakhverdiyev who defines it as "Agricultural cooperation is a form of joint economic activity of producers of agricultural products in one or more interdependent processes of labor and production. It provides results and economic benefits that would be difficult to achieve individually." [10].

They help to increase the competitiveness of the manufacturer due to the increase in labor productivity due to the increase in product quality and the level of mechanization, the use of waste-free and cost-effective technologies. [11].

Currently, Russian economists, in particular T. Abovoy, emphasize that the Law of the Russian Federation "On Agricultural Cooperation" does not clearly indicate the differences between production cooperatives and consumer cooperatives. [12].

However, this process has also reduced the market competitiveness of small farms in certain areas. For this reason, small farms (farmers, processors, transporters and

entities of the trade network) began to unite into "Production and trade cooperatives" [13].

In their works, the issues of economic efficiency of fruit and vegetable products were considered in detail, the methods of evaluating the level of efficiency, directions and ways of increasing it were studied. However, despite the discussion of many problems, scientists have not been able to agree on the organizational and economic basis of fruit and vegetable cooperation. A more in-depth study of the problem of cooperation of fruit and vegetable products requires a comprehensive economic assessment of the development reserves of fruit and vegetable processing and storage enterprises and rational scientific and innovative approaches to the organizational and economic foundations of cooperation of fruit and vegetable products.

Cluster concept has been defined by many scientists and researchers. Russian scientists E. B. Falkovich, D. A. Kotlyarov define the cluster as follows:

"Cluster is a territorial demarcated structure that is innovatively oriented to the ratio, organized on the basis of industrial and agricultural production, aiming to ensure competitiveness and increase productivity in the food sector of the region" [14]. This definition may be partially correct. However, this definition does not reflect the fact that clusters are expanding beyond the boundaries of one region. Alternatively, a question may arise, what is a fruit and vegetable cluster?

In our opinion, the Fruit and Vegetable Cluster is an innovative association that produces organic, high-quality fruit and vegetable products in agriculture, that is, a union of entities operating on the basis of cooperation with agricultural sector enterprises for the purpose of growing, storing, processing, exporting and industrialized products.

Many scientists are dealing with issues of cluster policy and its management. Among them, A. A. Migranyan describes the cluster as the most effective and interrelated types of economic activities, that is, a collection of effectively competing firms and groups. T. V. Tsikhan describes the clusters as follows:

- 1) agro-industrial clusters - consist of a union of highly coordinated sectors;
- 2) clusters - a territorially limited form of economic activity of interrelated industries that have entered into relations with scientific research institutions [15].

A. S. Khukhrin describes clusters as a unique integrated structure that arises as a result of self-organization. Not every integrated structure can be a cluster. In order to be a cluster, there must be productions in which the manufacturing processes of the manufactured products are located in a row [16].

One of the foreign agroeconomists characterizes the economic essence of cooperation as a relationship that ensures the commonality of the economic interests of various economic entities that independently combine their activities in solving the economic problems of the development of the horticultural sector and the development of a cluster-cooperative and integration process in agriculture. The author

emphasizes here that the main attention should be directed to serving the interests of independent entities entering into cooperative relations, and not property.

At the same time, despite the significance of these works in the development of the theory and practice of cluster-cooperative production in agricultural enterprises, the issues of the formation and adaptation of a fruit and vegetable cooperative to international experience are not fully disclosed in them. Insufficient theoretical and methodological development of the problems of formation of cluster-cooperative production of agricultural products.

### 3. Research Methodology

As a result of the conducted scientific research, proposals and recommendations were made regarding the issues of fruit and vegetable cluster development and increasing their efficiency. Systematic approach, abstract-logical thinking, comparison, factor analysis and comparative analysis methods were used in the research process.

### 4. Analysis and Results

Based on the decision of the President of the Republic of Uzbekistan "On additional measures to further develop the fruit-vegetable and viticulture industry and create a value-added chain in the sector", according to calculations based on the effective use of the cluster-cooperation system in the development of fruit-vegetable and viticulture, 1 hectare of it was determined that there is a possibility of getting 7 times more income than grapes, 6 times more than cherries, and 5 times more than walnuts compared to raw cotton.

According to the decision of the President of the Republic of Uzbekistan dated March 14, 2019 "On measures to develop agricultural cooperation in the field of fruit and vegetable production" No. PQ-4239: organization of cluster cooperatives for cultivation, processing and export of fruit and vegetable and grape products and selected from among processing and exporting organizations, based on their experience and capabilities, in which, first of all, unused capacities for storage and processing of products will be used must be lowered.

Cluster cooperatives of fruit and vegetable products differ from other cooperatives in that producers of agricultural products form them.

Comprehensive measures are being taken in our country aimed at actively attracting funds from international financial institutions to improve the fruit and vegetable industry, including a significant increase in the acreage of fruits and vegetables, storage and processing capacities, and the development of this sector is being implemented.

According to the analysis, the volume of vegetable cultivation in the republic increased in 2005-2020. For all types of farms. Instead of 137.7 thous. The average yield increased from 215.8 q to 301.6 q, and the overall increase was 140.6%. As a result, instead of 2971.6 thousand tons in 2005, the total volume of the harvested crop will amount to 6650.3

thousand tons in 2020. Gross growth was more than 2.2 times.

The trend of gross growth in the republic in the field of vegetable growing is proportionally observed in the Kashkadarya region. For example, in 2005 the total area of growing vegetables in the region was 28.1 thousand hectares, and by 2020 it increased by 38.1 thousand hectares or 128.8%, and the volume of gross output grown from 549.3 thousand tons to 810.3 thousand tons. per ton or increased by 142.0 percent. High growth rates of gross output occurred due to faster growth in crop yields than growth in sown areas. The yield of vegetable crops in the region compared to the all-Russian indicator in the studied years was in different proportions; mainly after 2005 it decreased by 29.5%.

In coordinating the activities of enterprises for the production, processing and storage of fruits and vegetables,

the trade sector is the closest link to the consumer and is constantly aware of changes in market demand for products. A cluster-cooperative system should be created that places an order with the manufacturer and delivers the product to the buyer in a freshly cut or processed quality product.

Therefore, fruits and vegetables achieve certain results in today's production, storage and processing of cluster cooperatives.

The creation of a fruit and vegetable cluster of cooperation should be carried out at the expense of economic support within the framework of cooperation.

At the end of 2019, the cluster-cooperative "Panji kishmishzorlari" of the Kitab district, whose socio-economic activity was studied, reached 75.1 centners of productivity in horticulture and viticulture and 87.3 centners in 2020 (table 1).

**Table 1.** Economic indicators of the cluster-cooperative "Panji Kishmishzorlari" of the Kitab district of the Kashkadarya region <sup>1</sup>.

Types of crops	Total area of land (crops), (ha)		Harvested area, (ha)		Average yield, (c. ha)		Gross assembly quantity, (tons)		Gross harvest in 2010 compared to 2020, (%)
	2010	2020	2010	2020	2010	2020	2010	2020	
	год	год	год	год	год	год	год	год	
Gardens	2380	3757	1679	3129	75,1	87,3	12606	27325	216,76
Grapes	4780	4419	2545	3810	67,1	97,2	17068	37035	216,99
Vegetables	1773	1456	1773	1456	256,4	289,0	45455	62948	138,48
Potatoes	1953	1149	1953	1149	116,1	203,1	22681	32123	141,63
Corn	7617	5306	7617	5306	42,5	38,3	32356	20344	62,88

In 2019, GREEN ATR KLAUSTER in Yakkabog district achieved an average yield of 81.6 centners in horticulture and viticulture, and by 2020 this figure reached an average of 113.7 centners. were grown in 2020.

**Table 2.** Economic indicators of "GREEN ATR KLAUSTER" in Yakkabog district of Kashkadarya region <sup>2</sup>.

Types of crops	Total area of land (crops), (ha)		Harvested area, (ha)		Average yield, (c. ha)		Gross assembly quantity, (tons)		Gross harvest in 2010 compared to 2020, (%)
	2010	2020	2010	2020	2010	2020	2010	2020	
	год	год	год	год	год	год	год	год	
Gardens	1247	3102	1158	1951	81,6	113,7	10421	22193	212,96
Grapes	1019	614	970	612	120,5	136,6	11687	8356	71,50
Vegetables	2033	1241	2033	1241	210,3	254,5	42747	46970	109,88
Potatoes	1489	754	1489	754	141,5	260,5	21063	29565	140,36
Corn	9960	11577	9960	11577	60,8	36,5	60584	42330	69,87

The results achieved over the past 10 years in vegetable growing are also positive: in 2010, 42,747 tons of products were grown with a yield of 210.3 centners; by 2020, 46,970 tons of products were grown with a yield of 254.5 centners. In this GREEN ATR KLAUSTER, potato cultivation in 2020 increased by 140.36% compared to 2010, instead of 21,063 tons of potatoes in 2010, 26,565 tons of potatoes grown in 2020.

If we analyze the indicators of economic efficiency of clusters-cooperatives in the field of fruit and vegetable production in Kashkadarya region, then in 2010, 10,421 tons of crops harvested from the orchards of GREEN ATR KLAUSTER, and the average yield of orchards was 81.6 centners. By 2020, the yield amounted to 113.7 centners, the volume of grown products - 22193 tons (Table 2).

In particular, the share of vegetable crops in 2000 was 4.5% of the total sown area, and by 2018 it was 7.3%. This will create an opportunity to make wider use of the region's opportunities for the development of vegetable growing. At

the same time, the increase in the number of harvested fruits in orchards is an important factor accelerating the return on investment in the horticultural industry.

In Uzbekistan, the relations between the participants of fruit and vegetable cluster cooperatives - producing, processing and exporting organizations are regulated by product supply contracts, and at the expense of advance funds allocated in advance for the purchased products, the producers are provided with seeds, seedlings, mineral fertilizers, fuel and lubricants. and providing other resources, providing agrotechnical and agrochemical services, giving recommendations on the use of new innovative technologies, providing information and consulting services.

Increasing the productivity of fruit and vegetable farming is one of the main directions in ensuring economic efficiency and is manifested as a result of a number of important activities carried out at the country level and at the level of an economic entity. Among the most important such activities are the popularization of breeding work, the establishment of

logistics for economic entities, the timely and high-quality implementation of agrotechnical measures, the placement of crops, taking into account soil conditions and climate characteristics.

Stimulation of cooperative relations between the participants of fruit and vegetable clusters is carried out by their financial support, providing the producers with working capital through processing and exporting organizations that are parties to the tripartite agreement, establishing new gardens, vineyards and greenhouses, storing products and on loans of up to 20 billion soums allocated by commercial banks for the creation of processing facilities.

The interest rate exceeding the refinancing rate of the Central Bank of the Republic of Uzbekistan, but not more than 8 percentage points, was provided as compensation or a guarantee in the amount of 50% of the loan amount at the expense of the state fund for the support of business activities.

Subsidies have been allocated to the participants of fruit and vegetable clusters to cover a part of the costs of purchasing intensive seedlings (small and semi-small) and cuttings grown in local conditions.

## 5. Conclusions

In order to increase the effectiveness of fruit and vegetable cluster-cooperative enterprises, it was determined that they should be formed based on product quality and organizational and economic foundations, as well as the introduction of marketing and logistics innovations. Currently, in Uzbekistan, more than 40 percent of raw materials for the fruit and vegetable industry are lost due to the inefficient transport and logistics system and the lack of centralized supply of local raw materials to the canning industry. The level of use of new techniques and technologies is 50-60 percent, which creates an opportunity for innovation in the field of optimization of technological production chains.

The analyzes show that it is expedient to use the following factors to increase the efficiency of fruit and vegetable cluster-cooperative enterprises: technical and technological (introduction of waste-free and low-waste food technologies, increasing the level of automation of technological processes, development of fruit and vegetable growing enterprises increasing production efficiency, ensuring the safety of fruits and vegetables, introducing new types of finished products - channels).

## 6. Recommendations

Scientifically substantiated proposals and recommendations for the development of fruit and vegetable cluster-cooperation cooperation:

- 1) Restoration of unproductive and low-yielding orchards and vineyards;
- 2) creation of a system for growing intensive fruit trees and vine seedlings suitable for soil and climatic

- conditions, and their further sale to business entities;
- 3) Encouragement of authors and organizers of new varieties of fruits and vegetables, protection of business entities involved in seed production and nursery, creation of a mechanism for certification of seedlings and seedlings;
- 4) taking measures to import into the territory of the republic varieties of vegetables and fruits that are in high demand on the world market and suitable for the soil and climatic conditions of the republic, from countries with developed seed production;
- 5) Creation of high-yielding, frost-resistant and seedless varieties of vegetables and fruits, introduction of promising varieties;
- 6) development of a methodology aimed at improving the nursery system in fruit and vegetable growing;
- 7) in order to improve agro technical measures in fruit and vegetable growing, localize the production of special equipment used in vineyards in the republic and introduce a system of long-term lease on preferential terms;
- 8) ensure the creation of new orchards and vineyards based on pure varieties and virus-free seedlings;
- 9) Ensuring the production of quality products through the introduction of modern agro technical measures in fruit and vegetable farms.
- 10)The main directions of development of the fruit and vegetable industry are defined as follows:
- 11)determination of optimal areas in favorable regions for specialization in fruit and vegetable growing;
- 12)development of viticulture as a national culture based on the national culture of agriculture and the values of our people, formed over the centuries;
- 13)Creation of a value chain in the field by growing fruits and vegetables on large areas in a cluster and cooperative method, promoting the storage, sorting and processing of grapes;
- 14)Expansion of exports by creating national brands of fruit and vegetable varieties and entering new markets;
- 15)in the fruit and vegetable direction, "the best grape variety", "the best intensive vineyard", "the best local grape variety", "the best wine product", "the best vegetable variety", "the best intensive vegetable", "the best for creating a republican examination competition, held in nominations such as "vegetable variety";
- 16)availability of infrastructure facilities necessary for its functioning (on the rights of ownership or use or full ownership), as well as qualified personnel and other means, as well as financial stability;
- 17)develop a scientific school of fruit and vegetable technology in order to grow fruit and vegetable products on a scientific basis, create new productive, seedless varieties, and establish a comprehensive integration of science and production;
- 18)Based on the soil and climatic conditions of the regions, create a full cycle of growing vegetables and fruits, drying, packaging, processing, production of finished products and exports, create viticulture and

- vegetable clusters;
- 19) business plan or feasibility study for the implementation of investment projects for growing, packaging, sorting, processing and introducing resource-saving technologies;
- 20) Infrastructure facilities necessary for its operation (on the rights of ownership or use or full ownership), as well as the availability of qualified personnel and other means and financial stability.

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## References

- [1] Ukaz Prezidenta Respubliki Uzbekistan ot 23 oktyabrya 2019 goda № UP-5853 «Ob utverjdenii Strategii razvitiya selskogo xozyaystva Respubliki Uzbekistan na 2020-2030 godi»
- [2] Postanovlenie Prezidenta Respubliki Uzbekistan PP-4239 ot 14 marta 2019 goda «O merax po razvitiyu selskoxozyaystvennoy kooperatsii v oblasti plodoovoshnogo proizvodstva»
- [3] Postanovlenie Prezidenta Respubliki Uzbekistan PP-4549 ot 11 dekabrya 2019 goda «O dopolnitelnix merax po dalneyshemu razvitiyu plodoovoshnoy i vinogradarskoy otrasli i sozdaniyu seepochki dobavlennoy stoimosti v otrasli»
- [4] Porter, M. 1998. Clusters and the New Economics of Competition. Harvard Business Review. Available at: <http://hbr.org/product/clusters-and-the-new-economics-of-competition/an/98609-PDF-ENG>
- [5] Chayanov. A. V. Basic idea and form of organization of agricultural cooperation. - Moscow. -1927. - 357 p.
- [6] Buzdalov. I. N. Vozrojdeniye Cooperative. - M.: Economics.-1990. -81 p.
- [7] Tugan-Baranovskiy M. I. Kooperatsiya v selskom xozyaystve. – Moskva: MSXA RF, –1999. – 29 s.
- [8] Ergashev R. Kh. Agricultural economics, Darslik, T.: "Finance-Economy", 2018, p. 45-47.
- [9] Husanov R. H. Scientific and practical foundations of farming.-Tashkent: Chulpon, 2000.-p. 103.
- [10] Allahverdiev A. I. Development of forms of cooperation in the agrarian sector of the agro-industrial complex. -Moscow: - Economics. -2003. -p. 10.
- [11] Kubansky I. K. World experience in the development of agricultural cooperation. <http://www.kaicc.ru/node/1206>.
- [12] T. E. Abovoy. “The concept and types of cooperatives”. <https://pravo-wmeste.ru/ponyatie-i-vidy-kooperativov.html>
- [13] V. G. Yegorov. World experience in the development of cooperation in agriculture. Russia, Forest Bulletin No. 3, - 2012, p. 184.
- [14] Falkovich E. B., Kotlyarov D. A. Agrarian cluster kak innovatsionnoe napravlenie integratsii v APK stran tamojennogo soyuza i edinogo ekonomicheskogo prostranstva. Vestnik Belgorodskogo universiteta kooperatsii, ekonomiki i prava.
- [15] Tsikhan, T. V. Klasternaya teoriya ekonomicheskogo razvitiya [Text]/T. V. Tsikhan // Theory and practice of management. - 2003. - No. 5. - S. 40.
- [16] Khukhrin A. S. Concept of development of agrarian clusters in the Russian Federation. Economics, labor, upravlenie v selskom hozyaystve. 2011. - No. 1 (6). - p. 15-20.

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1 Developed by the author on the basis of information from the Panji kishmishzolari cooperative of the Kitab district of the Kashkadarya region.

2 It was developed by the author based on the information of "GREEN ATR CLUSTER" in Yakkabog district, Kashkadarya region.