



ANALYSIS OF THE MANAGEMENT STRUCTURE OF FRUIT AND VEGETABLE AGRICULTURAL CLUSTERS AND WAYS TO IMPROVE IT

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Abstract. This article analyzes the management structure of fruit and vegetable agroclusters. The theoretical foundations of effective cluster management, the advantages and disadvantages of existing organizational mechanisms are studied. As a result of the study, practical proposals have been developed aimed at introducing digital technologies and strategic management elements in order to increase the efficiency of cluster activities.

Keywords: Agrocluster, management structure, vertical integration, coordination, digitalization, efficiency.

Introduction. Today, in the Republic of Uzbekistan, the development of the agricultural sector on an innovative basis, the efficient use of land and water resources, the creation of a high-value-added chain, and increasing competitiveness in international markets have become a priority state policy. In particular, the fruit and vegetable sector plays a crucial role not only in ensuring food security, but also in strengthening the country's export potential.

The most important institutional mechanism for achieving these goals is the system of agroclusters, which began to be introduced in 2018. By their nature, clusters combine all processes, from raw material production to its processing, storage, certification, and final export, on the basis of vertical integration.

However, the stable and highly effective functioning of these new economic structures directly depends on how perfect, transparent and flexible their management structure is. Analyzing the existing management structures, identifying systemic problems related to their coordination, financing and implementation of innovations, as well as developing scientifically based recommendations for improving management are among the most urgent scientific problems of our time.

The regulatory framework regulating the activities of fruit and vegetable agroclusters has been significantly updated in recent years. This confirms the high relevance of this topic not only in theoretical, but also in practical and political terms:

The Decree of the President of the Republic of Uzbekistan No. PF-6122 dated December 11, 2020 "On measures to further improve the activities of clusters in agriculture" is aimed at strengthening the activities of clusters, in particular, creating an added value chain and ensuring their financial stability, which directly affects their management. The Decree notes the need to stimulate the high-tech and innovative activities of clusters, which requires the orientation of their management structure towards innovative development.

The Resolution of the President of the Republic of Uzbekistan No. PQ-20 dated November 23, 2021 "On additional measures for state support for the development of fruit and vegetable growing and viticulture" is directly aimed at clusters specializing in fruit and vegetable growing, focusing on issues of strengthening their financing mechanisms, export opportunities, and



material and technical base. To ensure the implementation of this resolution, it is important to improve the financial management and risk minimization system of clusters.

The Strategy for the Development of Agriculture until 2030 identifies clusters as the main institutional reformers of the agricultural sector. This strategy places special emphasis on increasing management efficiency through digitalization, that is, the introduction of "smart agriculture" solutions.

The analysis of the above documents shows that the head of our state has set the task of bringing the activities of clusters to a qualitatively new level, transforming them into effective management and competitive structures. This once again confirms the theoretical and practical relevance of the topic of this study.

One of the priority areas of economic reforms in the agrarian sector of Uzbekistan has been the introduction of agroclusters. In particular, clusters play an important role in creating a high value-added chain in fruit and vegetable growing, improving product quality and increasing export potential. However, the full realization of the economic effectiveness of clusters depends on the perfection of their management structure and mechanisms. The purpose of this study is to analyze the current state of management of fruit and vegetable agroclusters and provide scientifically based recommendations for its improvement.

Literature review. The cluster concept was developed by M. Porter, which is considered as a set of geographically close, interconnected enterprises, specialized suppliers and institutions.

The management structure in agroclusters is based on two main principles:

1. Vertical integration: Combining all stages of production (from seeds to sales of finished products) under one management.
2. Coordination: Ensuring a balance of resources, information and interests between cluster participants.

An effective management structure serves to minimize conflicts within the cluster and achieve the effect of economic synergy.

Analysis of the management of fruit and vegetable agro-clusters in Uzbekistan shows that most of them are based on the "leading enterprise-participants" model. The leading enterprise usually performs the functions of processing, storage and sales (export), while agricultural producers (farmers) supply products on a contractual basis.

Advantages:

- 1) Centralization of capital: Possibility of implementing large investment projects (for example, cold storage, processing workshops).
- 2) Quality control: Adjusting product quality to standards based on the requirements of the leading enterprise.

Existing shortcomings:

1. Information asymmetry: Incomplete exchange of information between farmers and cluster management regarding market prices and requirements.
2. Coordination problem: Slowness in synchronizing planning and execution between cluster participants (farmers, logistics companies).
3. Innovation lag: Predominance of traditional methods in management, slow pace of implementation of modern Digital Management Systems (ERP, SCM).



RESULT. To increase the efficiency of cluster activities, it is advisable to improve the management structure in the following areas:

1. Integrate Digital Management

a) Create Agro-platforms: Introduce a single information platform uniting cluster participants. Through this platform, establish real-time information exchange on the planned volume of the crop, necessary resources, logistics processes and market prices.

b) Use of "smart farming" technologies: Make management decisions based on data from \$GPS/GIS\$ (geographic information systems) and drones, for example, precise allocation of water and fertilizer resources (precision farming).

2. Strengthen Strategic Management

a) Apply corporate governance principles: Increase the transparency of the decision-making process by ensuring the participation of all participants (including farmer representatives) in the Cluster Councils.

b) Long-term strategic plans: Develop and strictly implement 3-5-year strategic plans based on market trends, export directions and product diversification, distancing the management process from current needs.

3. Human Resource Development. Organize special training programs for cluster managers and leaders on modern management methods, international marketing and supply chain management.

Analysis of the Management Structure of Fruit and Vegetable Agroclusters and Ways to Improve them

Table 1

Nº	Management Element	Analysis of the current situation (Current problems)	Ways to Improve (Recommendations)
1	Cluster Governing Body (Head Office/Directorate)	High centralization, insufficient involvement of participants in decision-making.	Introducing a cooperative management model: Establishing a Stakeholder Council (representatives of farmers, processors) and increasing their role in management decisions.
2	Level of Vertical Integration	Weak or unfair contractual relationships between raw material producers (farmers/farmers) and processors/exporters.	Strengthening the contractual framework: Establish a system of long-term, transparent contracts that protect the interests of farmers and include clear mechanisms for price and quality.
3	Financial Management	Seasonality of working capital, difficulty for small farmers in	Establish an Internal Cluster Credit Fund (or Cooperative Bank): Provide low-cost, short-term financial assistance to



		accessing credit resources.	cluster members and diversify risks.
4	Innovation and Scientific Support	Weakness of the mechanism for implementing modern agrotechnologies, seed production, and selection results.	Formation of the Department of Research and Extension Services: Mandatory introduction of new varieties, floating (drip) irrigation, and energy-saving technologies in collaboration with universities and research centers.
5	Marketing and Export Management	Mainly raw material exports, low share of finished products (with high added value), lack of branding.	Creating a Single Cluster Brand and exploring international markets: Promoting deep product processing (freezing, drying, canning) and integration into major export platforms.
6	Information and Communication System	The exchange of information on production, supply chain, and market prices is not transparent.	Implementation of a Digital Management Platform (Agro-IT): Providing real-time access to information on resources, crop plans, supply and demand for each participant in the cluster.

Conclusion

Fruit and vegetable agroclusters are becoming an important driver of the agrarian economy of Uzbekistan. Their stable and highly efficient operation directly depends on the modernization of the management structure. By digitizing information exchange, increasing the participation of participants in decision-making, and training professional personnel, it is possible to significantly increase the management efficiency of clusters and at the same time strengthen the export potential of our country.

This research work was devoted to analyzing the management structure of fruit and vegetable agroclusters, identifying existing problems and developing scientifically based solutions to eliminate them. As a result of the research, the following main conclusions were formulated and practical proposals were developed based on them.

Fruit and vegetable agroclusters have great potential as an effective mechanism for vertical integration and high added value creation in the agricultural sector of Uzbekistan. However, an analysis of the management efficiency of agroclusters shows that serious institutional and organizational improvements are required to realize their full potential.



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