SUSTAINABLE DEVELOPMENT OF WALNUT PRODUCTION ON THE BASIS OF INNOVATIVE-CLUSTER APPROACH

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Abstract: *The sustainable development of walnut growing is substantiated on the basis of a cluster approach, regional and sectoral partnership of walnut growing enterprises, food industry, scientific institutions, united by the program of innovative cluster development of the agro-industrial complex of the region. A set of program measures for the development of walnut growing for the period 2019-2021 is proposed for implementation at the regional level. as an innovative project.*
Keywords: *innovative cluster, walnut growing, walnut clusters, food industry, scientific institutions, climatic conditions, environmentally friendly products.*

Introduction. The agriculture of any country is one of the main components of the economy, which ensures food security. For Uzbekistan, with its economic, social and regional diversity, providing the population with necessary and vital food is a paramount task. Its implementation depends on the development of agriculture, enterprises involved in the processing of products, as well as those related to the service and social spheres.

Scientific substantiations and practice of functioning of agro-industrial formations of various organizational and legal forms prove the effectiveness and expediency of agro-industrial integration. However, modern studies of integration into the agro-industrial complex of Uzbekistan do not reveal the problems of increasing competitiveness in integrated structures, the development of their walnut enterprises in an innovative direction, there is no unified approach to assessing their activities.

Scientific research on theory, methodology and practice, experience in the development of high-tech production systems in Uzbekistan and abroad show that one of the most effective forms of economic management is a policy based on clusters. The cluster belongs to a variety of network structures and is distinguished by the presence of an innovative component that allows you to adapt to changes in the competitive sphere. A cluster is defined as an industrial complex formed on the basis of a territorial concentration of networks of specialized suppliers, main producers and consumers, connected by a technological chain and acting as an alternative to the sectoral approach.

In our concept, a cluster is geographically another concentration of suppliers, producers, consumers, infrastructure with active channels for entrepreneurial transactions, dialogue and interaction, based on taking into account the positive synergistic effects of the regional agglomeration.

The founder of the cluster theory is considered to be Professor Michael Porter of the Harvard School of Economics, who defined a cluster as a group of geographically neighboring interconnected companies and organizations operating in a certain area, characterized by a common activity and complementary to each other.

Agroclusters are called territorially localized innovative structure, which is created on the basis of agricultural and industrial economy. These structures are intended to create an industrial basis for increasing the efficiency of the food sector, its competitiveness, as well as the correct redistribution of the potential of the territory.

Materials and analysis. The advantages of the development of walnut clusters include: 1) organizational and legal form in the form of an association (non-profit partnership) voluntary association of individuals or legal entities for the purpose of mutual cooperation while maintaining their independence and independence; 2) the availability of quality standards is higher than in the home region; 3) orientation of products for export; 4) savings on purchases due to joint work with suppliers; 5) reduction of transaction costs; 6) collective brand; 7) redistribution of production; 8) joint distribution network; 9) interaction of the cluster with the authorities.

The cluster approach contributes to an increase in employment in the countryside, the formation of rural infrastructure, the effective development of intersectoral relations, the dissemination of technologies, experience and information, the realization of the innovative potential of enterprises in the cluster structure, in particular in the walnut cluster

These structures have a significant advantage over conventional isolated farmers. All agricultural enterprises that are part of the cluster receive a clear benefit from primary producers (they are also well aware of the requirements of buyers and help maintain established relations of trade and processing in foreign markets).

We emphasize that clustering, whatever type it is, is mainly aimed at the development of agricultural production in the most developed territories of the region. Simply put, if the region has the potential for the active development of nut products, then it is necessary to produce in the cluster, for example, walnut, kernel, green walnut jam, walnut pericarp, processing, etc.

The participants of the walnut growing cluster are specialized walnut growing enterprises, resellers, research institutes, universities, government agencies. The cluster is based on large processing enterprises of the region.

In Uzbekistan, for a long time, the implementation of walnut cluster policy remained without due attention. Only in recent years has this problem been considered at the level of the government and other state structures.

An example of the beginning of the implementation of a cluster policy in agriculture in our country can be considered the formation of a walnut cluster in the Samarkand region. In a number of regions of Uzbekistan, specific legislative measures have been taken to implement the walnut cluster policy. Such regions include Jizzakh, Andijan, Fergana, Namangan and Kashkadarya regions and other subjects. The combination of natural-climatic, economic, scientific and historical conditions determines the mountainous regions as one of the leading walnut-growing regions of Uzbekistan.

Nut growing produces high-quality vitamin products, so it has an important place in the food policy of the state. Uzbekistan, on the initiative of President Shavkat Mirziyoyev, on June 1, 2017, the Association of Walnut Producers and Exporters was established. The main directions and tasks of the Association are: the development of walnut growing and the increase in the production of walnuts, almonds and pistachios in the republic, which is competitive both in the domestic and foreign markets. Also, one of the tasks of the organization is to coordinate the implementation of programs to create modern walnut plantations. In order to further stimulate the efficient use of rainfed lands and increase the production of walnuts in the Republic of almonds and pistachios, the development and conduct of research work on the adaptation of seedlings, scions and rootstocks of walnuts, almonds and pistachios to local climatic conditions.

The introduction of modern resource-saving technologies planned by the Association, such as a drip irrigation system, processing of finished products and other production processes that meet international standards, will help increase the export potential of the Republic of Uzbekistan and develop this industry.

Based on the study of climatic conditions and water resources, as well as world experience, planting and cultivation of the walnut variety Chadler is recommended on the territory of the Republic of Uzbekistan. It is one of the high-yielding and prolific varieties of walnut, resistant to frost and the hot climate of Uzbekistan.

To date, members of the Association are more than 80 farms and farm entities in all regions of the republic involved in the development of walnut growing. To date, the area allocated for the Association's plantation projects is 5,000 hectares in the territories of Samarkand, Jizzakh, Kashkadarya, Surkhandarya regions.

In our country, through the further development of horticultural clusters in these industries, a value chain is being created and the production of export-oriented products is being established. According to the Decree of the President of the country "On additional measures for the further development of horticulture and viticulture, the creation of a value chain in the industry" dated December 11, 2019

The Ministry of Agriculture will implement a modern approach to accelerating the transition to the principles of a market economy, increasing the volume of processing, exports and value-added products through the creation of clusters in all areas specializing in the cultivation of fruits and vegetables. This year, 2 million 400 thousand tons of fruits and vegetables will be exported, which is 1.7 times more than last year. In this regard, exporting and processing enterprises, which have a high potential in terms of infrastructure for the placement, processing and storage of export-oriented highly productive crops, have begun work on creating clusters. In the regions, there are ample opportunities to create walnut clusters and increase their export potential by connecting production enterprises to processing and exporting enterprises based on the principles of cooperation. At present, the average yield of traditional orchards with a total area of 20.2 thousand hectares is 7-8 tons of products. This year, it is planned to grow 238.5 tons of fruits, of which 22.8 percent will be exported, and 33.4 percent - for processing.

An opportunity will be created for obtaining high yields by creating intensive orchards in place of unproductive orchards that have fallen into disrepair. From each hectare of a walnut orchard with a total area of 125 hectares, 30 tons of nuts are obtained in the limited liability company "Ekoagro product" of the Yukorichirchik region.

Also, high yields from 110 hectares of the walnut garden are obtained at Urtachirchikgoldenfruit LLC of the Urtachirchik district, from 68 hectares of the walnut garden - at Bustonlik Green Garden LLC of the Bostanlyk district. This year it is planned to create intensive orchards on 3,250 hectares of land. At the moment, the gardens are laid out on 1240 hectares of area, an area of 480 hectares has been prepared. 276.2 billion soums have been allocated for this. Today, 24 horticultural clusters have been created in the region, the area for gardens in their department is 5241 hectares. In particular, the clusters of Tashkent, Akhangaran and Parkent districts plan to create intensive gardens on an area of 1405 hectares. This year, subsidies are provided for the installation of drip irrigation equipment.

To identify industry competitive advantages in the region, it is necessary to calculate the clustering potential, which reflects the presence of competitive advantages of industries, enterprises and infrastructure organizations located in the region, the possibility of combining these advantages and using them to increase its competitiveness. The essence of the methodology for assessing the clustering potential is to calculate the coefficients of per capita production and specialization, which are given in Table 1. The coefficient of per capita production is calculated by the ratio of the share of the region's industry in the corresponding structure of the country's industry to the share of the region's population in the country's population. The coefficient of specialization of a region in a given industry is defined as the ratio of the share of the region in the country in this industry to the share of the region in the country's GDP. If the name coefficients are equal to or greater than one, then in this industry it is possible to create a cluster for walnut growing.

Table 1.

The essence of the methodology for assessing the clustering potential (the coefficients of per capita production and specialization)

Indicators	2017 y	2018 y	2019 y	2020 y
Per capita production rate	1,15	0,90	1,10	1,08
Specialization coefficient	2,29	1,61	2,12	0,69

Discussion. As can be seen from Table 1, the calculation of clustering potential indicators confirms the possibility of creating a regional walnut cluster. The low coefficient of specialization in 2020 is explained by a sharp decrease in the gross production of walnut products in the regions of the country due to unfavorable climatic conditions, which is typical for walnut growing, especially in the foothill zone. All of the above confirms the existence of objective prerequisites for the creation and successful operation of a walnut cluster in the foothill areas. The implementation of this project will ensure the effective development of the industry in the region, reduce production costs due to the common economic interests of the cluster members,

sustainable industrial relations, production resource upgrades. In addition, it will make it possible to supply large volumes of environmentally friendly products to the market at relatively low prices. We propose a possible scheme for a walnut cluster.

At the same time, it is necessary to note the objective reasons that impede the creation of a walnut growing cluster in the foothill zones: the structural disunity of walnut growing subcomplex enterprises; seasonal activity of walnut farms; obsolete perennial plantations as the production basis of the cluster; underdevelopment of sales channels for products; unsatisfactory financial condition of a number of farms in the industry, high costs of creating an efficient production complex, etc.

Despite this, the expected economic effect and the state task of providing the population with high-quality and affordable products are designed to ensure the successful implementation of the walnut cluster project. This project acquires particular relevance in the context of the need to ensure food security in Uzbekistan.

Conclusion and recommendations. Thus, the economic mechanism for the formation and functioning of agro-industrial clusters should be focused on the implementation of synergistic effects. It is achieved through the creation of common financial, material, informational, innovative and other resources, joint access to domestic and foreign markets with competitive products, balancing the interests of cluster subjects, organizing an effective system of self-government, etc.

The creation of large walnut clusters allows:

- combine into a single system of production, processing and sale of products at the districts and regional levels;
- simplify the process of harmonization of interests and interaction between partners throughout the chain;
- create a structure that forms the basis for the economic management of agro-industrial production;
- to protect the interests of the association participants before other market entities;
- organize mutual lending within the framework of economic formation, establish relations between participants in the supply of various types of products and the provision of services;
- to strengthen the economic influence of the participants of the association on the development of raw material zones for the production of agricultural products and their processing;
- involve significant labor resources in the sphere of production activity.

The goals of the ongoing work are the introduction of effective market mechanisms in the development of walnut growing, the full use of existing opportunities, increasing the income of the population by creating new mechanisms for the development of a system of clusters and cooperation, and achieving expansion of export opportunities.

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