



## METHODS OF DEVELOPING THE PRODUCTION OF WALNUTS FROM A STANDPOINT

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**Abstract.** Through a thorough and in-depth investigation of the available sources, the function of the walnut market at the national and regional levels and the necessity of expanding their operations are studied. This research is important from both a scientific and practical standpoint. A significant addition to the research on the economic and organizational underpinnings of walnut production, as well as the strategies for setting up walnut groves in rural regions in light of the evolution of market relations. Enhancing the economic and organizational structure of the walnut production system in the Andijan area and formulating recommendations for future growth based on scientific evidence are two of the topic's most crucial elements.

**Keywords:** walnut production, walnut yield, gross yield, efficiency, agrocluster, food market

**Introduction.** Consistent plans have been made in recent years to restructure agriculture and use market procedures. Specifically, the introduction of the cluster method of production in agriculture enables the delivery of end goods to consumers through the processing of raw materials cultivated using the cluster method. Currently, Uzbekistan exports over 80 different kinds of agricultural goods to 66 nations worldwide.

At the same time, the industry's current potential is underutilized due to a lack of structured, efficient market procedures, particularly in the growth of horticulture and viticulture. Another issue is the absence of a scientific approach. Assessments show that you can make seven times as much money from grapes, six times as much from cherries, and five times as much from walnuts than you would from one hectare of raw cotton.

There is a strong demand for food items, limited land and water resources, and increasing population expansion and density throughout the Fergana valley, which includes the Andijan area. Reforming the region's agriculture industry and building the scientific and methodological foundations necessary to establish the food market and provide workable ideas are among the most urgent concerns of our day.



Since the food market dictates the economic and social stability of a nation, its growth is contingent upon the potential of each nation, the established economic ties, and the application of market-oriented policies as outlined in the relevant documents. To do this, it must be examined conceptually and analyzed in order to produce workable recommendations. The strategic orientations of global food markets can be inferred from prospective indicators created by international scientists based on the analysis of linkages unique to market circumstances.

The research of the role of the walnut market at the national and regional levels and the need to develop their activities is of scientific and practical importance through a comprehensive in-depth analysis of available sources. An important contribution to the research of the organizational and economic basis of walnut production, as well as the methods of organizing walnut groves in rural areas in the context of the development of market relations. The consideration of the current state and economic efficiency of growing walnut products in rural areas for the food market, the possibility of stimulating investment activity in the development of walnut production in rural areas, as well as improving the mechanism of support for the development of walnut exports and foreign experience. One of the most important aspects of this topic is the improvement of the organizational and economic framework of the system of walnut production in Andijan region and the development of scientifically based recommendations for future development.

**Research methodology.** The article uses abstract-logical thinking, comparative analysis, expert evaluation methods. In studying the factors influencing the efficiency of the walnut industry in Andijan region, it is important to prepare recommendations based on the analysis of local walnut growers and foreign experience.

**Level of study.** The research of many foreign scientists is devoted to the development of walnut cultivation. In particular, the dissertation of the Iranian researcher Mahmoud Bakhshinejad "Comparative advantages of crops of the nut family in Iran" states that Iran has a high potential to increase the existing relative advantage in the production and export of nuts. it is expedient to develop and implement a set of measures to create favorable conditions for efficient production.

Australian H. Adem & Peter H. Jerie's "Walnut Industry. Research & Best Practice Implementation" looks at the prospects for increasing economic efficiency through the organization of production in the form of an association of nut growers. It focuses on organizational issues, emphasizing that the preparation, planting and processing of walnut seedlings are important factors in achieving efficiency. It also compares the annual income and expenses during the development of the coconut



and suggests that this can be achieved through special investment programs, tax incentives.

Indicators of economic efficiency of walnut production in Uzbekistan are a relatively new direction, which has been partially studied in a number of studies in the field of fruit growing.

**Analysis and results.** The areas where walnuts can bear fruit are quite limited - only 7% of the planet's land area is suitable for this. Uzbekistan is one of the few countries in the world that is suitable for growing walnuts. In recent years, our country has become one of the leaders in the production of walnuts.

The fact that Uzbekistan has risen to 8th place in the world in the production of walnuts in 2022 with a figure of 56,116 tons indicates a significant increase in production, but shows that we are not using the natural resources of our country wisely. At present, the first steps are being taken in our country to create conditions for the creation of intensive walnut groves, to achieve the development of the sector by providing farmers with the necessary advice and guidance, and to take a worthy place in world markets.

Despite the fact that walnuts, which are in high demand in the world market and even prices are increasing from year to year, local farmers grow and sell in relatively small quantities.

By the Decree of the President of the Republic of Uzbekistan dated June 1, 2017 "On the establishment and organization of the Association of Walnut Producers and Exporters", the Association of Walnut Producers and Exporters was established in Uzbekistan. The decision is aimed at encouraging the use of arable land and further increasing its efficiency, increasing the production of walnuts, which are competitive in local and foreign markets, building modern walnut orchards through the widespread attraction of foreign investment and the widespread introduction of science-based methods and intensive technologies.

In Andijan, Kashkadarya, Jizzakh, Namangan, Samarkand, Surkhandarya, Tashkent and Fergana regions, it is planned to allocate land plots with a total area of up to 10,000 hectares, suitable for planting walnut seedlings, according to natural and climatic conditions and soil composition. .

Up to \$ 50 million in loans will be provided for projects to build walnut plantations through soft loans from international financial institutions. Until 2024, the members of the Association will be exempted from customs duties on imported



drip irrigation equipment, special agricultural machinery, walnut seedlings, grafts, maternity materials, which are not produced in Uzbekistan.

Analysis by the International Council of Nut and Dried Fruit shows that in many developing countries, traditional horticulture is giving way to specialized industries.

In particular, intensive walnut growing is being developed. In the 2018-2020 season, the world produced more than 4.2 million tons of walnuts, which is 11% more than last season and 30% more than the average for the last decade.

Therefore, today in Andijan region, active work is being carried out in several areas of fruit growing. In particular, targeted efforts have been launched to form and develop the walnut industry.

In accordance with the abovementioned Decree, a total of 557 hectares of new walnut orchards were planted in Andijan region, a total of 223,000 walnut saplings were planted on 151 hectares in 2018 and 406 hectares in 2020.

In Andijan region, 572,000 walnut seedlings were planted on a total of 2,397 hectares under the project to create walnut plantations in 2020-2022. As a result, 552 jobs were created.

In recent years, the gross yield of walnuts has grown significantly. We can analyze the data in Table 1, which shows that today the volume of walnut production in Andijan region in 2024 increased by 1.8 times compared to 2016.

In 2016, Andijan region produced 3,746 tons of walnuts, and by 2024 this figure was 6,980 tons. Among the districts, Oltinkul district produced 1,744 tons of walnuts in 2024, which is higher than other districts.

Demand for this product is growing as more and more people around the world are focusing on healthy and wholesome nutrition, including walnuts.

According to the analysis of the walnut market by experts, the average annual increase in the price of unrefined walnuts over the last decade has been 8%, while that of refined ones is 10%. Even exotic products cannot show such a steady increase in price. Unfortunately, national producers do not benefit enough from this. In this context, the modernization of a perspective sector of the economy will have to wait a long time.

**Table 1. Volume of walnut production in Andijan region (tons)**

T/r		year					g
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			year	year	year	year	
1.	Andijan	443	550	612	743	874	197
2.	Asaka	165	212	236	286	337	204
3.	Balyqchi	210	237	263	320	376	179
4.	Buloqboshi	38	46	51	61	72	188
5.	Bo'ston	40	49	54	66	77	193
6.	Jalaquduq	192	214	237	288	339	177
7.	Izboskan	201	226	251	305	359	179
8.	Ulugnor	185	196	218	264	311	168
9.	Markhamat	191	212	236	286	337	176
10.	Oltinkul	901	1099	1221	1483	1744	194
11.	Pakhtaobod	336	375	416	506	595	177
12.	Khujaobod	65	60	67	81	95	146
13.	Shakhrikhan	449	504	559	679	799	178
14.	Kurgantepa	130	168	186	226	266	205
15.	Andijan town	163	198	220	267	314	193
16.	Honobod town	37	53	59	71	84	227
	Total	3746	4397	4886	5933	6980	186

Many countries in the world, which import this product from Uzbekistan, also grow large quantities of walnuts. But unlike us, it is mainly sold in the local market. People who are wealthy and care enough about their health are eager to buy cheap Uzbek walnuts, even if they are not of good quality.

According to the comparative data of the Association of Walnut Producers and Exporters, the average annual consumption of walnuts in Europe and the Gulf countries is 4.2-5.6 kg per capita, while in Uzbekistan this figure is only 1.8-2.4 kg.



One of the experts pointed out the essence of the problem - Uzbekistan has enough walnuts, but the population does not have the financial resources to buy them. This environment increases the price gap in the local and foreign markets and strengthens the desire to export high-income products from our country in any way.

World market conditions and favorable natural and climatic conditions create conditions for the development of national nuts. However, Uzbekistan's role in the production and export of high-demand products is unsustainable. This is hampered by disparities in production and pre-sales preparation for demanding consumers.

When we considered the yield of walnuts per hectare in different categories of farms in Andijan region, the highest share fell to the share of dekhkan farms (small households) until 2022, and in 2024 this figure fell to the share of farms. From this we can conclude that in 2018, due to the increased attention paid by the head of our state to this area, the newly established walnut farms have achieved high yields.

**Table 2. Yield of walnuts grown in Andijan region (centner / ha)**

№	Farms (organizations)	Years					i n
		2016	2018	2020	2022	2024	
1.	Farms	86,3	98,3	79,5	157,3	540	625,7
2.	Dehkan (personal assistant) farms	195	216,1	266.0	258,8	340	174,4
3.	Other farms	3	8	3,4	3,9	6	200,0
	Total by region	195,2	202,1	253,3	239,5	297,4	152,4

World experience shows that high-quality product can be obtained only from seedlings of selected varieties grown industrially. At the same time, the harvest should be sorted, dried and packed in modern forms in well-equipped enterprises. However, this sector of the economy in Uzbekistan is underdeveloped. Walnut production is mainly carried out on private farms, which, according to various analyzes, account for more than 80-85% of the gross harvest. Large enterprises engaged in processing and preparation of nuts can be counted on the fingers of one hand. This means that the production, processing and export of most of the nuts falls on the black market.





Insufficient organization of production on the basis of market requirements, low level of control, enrichment of some categories due to the labor of small producers.

Every year in the autumn in the farmers' markets there is an increase in the number of buyers of nuts from the rural population at low prices. The fact that prices in the local market are much lower than in the foreign market makes them more attractive. Due to the lack of preparation points in the villages, small producers cannot trade wholesale. They are forced to accept the terms of those they think are entrepreneurs. Walnuts, which cost \$ 2-2.5 on the world market, are sold in local markets for only 5-6 thousand UZS per kilo. These illegal intermediaries embezzle additional income that makes up at least 50% of the initial price of the wholesale product. Those who then dry and sort it will have an added value of 300 percent or more. In doing so, they present themselves as privileged and do not pay income tax.

There have been significant shifts in the organizational work of the Walnut Association. The Association of Walnut Producers and Exporters has a significant impact on the solution of certain problems by involving scientists and practitioners in its work, in addition to informational and explanatory work.

The systematic work carried out since the establishment of the Walnut Association has shown full results. The work of the Association of Walnut Producers and Exporters, such as the modernization of the industry, the organization of industrial walnut groves, began to bear fruit. As a result of the analysis, it is planned to establish walnut orchards in almost every district for the last 3 years to increase walnut production by 10 times.

According to the Association of Walnut Producers and Exporters of Uzbekistan, the area of new orchards created by the walnut family in 2022 will be 10.7 thousand hectares, which is almost 3 times more than in 2015. The largest number of new coconut groves is located in Samarkand, Kashkadarya and Surkhandarya regions on an area of more than 5.9 thousand hectares.

**Conclusions and suggestions.** Taking into account the specifics of the food market, a special approach to its development is required. In this regard, the potential and characteristics of each region is an important factor. In this regard, the development of the food market in Andijan region, which we are analyzing, taking into account its natural and economic and labor potential, as well as its specific demographic characteristics, should be carried out in the following areas:

- Self-sufficiency in quality food through the development of agricultural production and processing in the region;



- Improving the organizational, economic and legal framework for creating conditions for the development of trade in manufactured food products, as well as the creation of comprehensive infrastructure facilities.

The implementation of these arrangements is of great practical importance in ensuring the full functioning of the regional food market, which serves as an important factor in ensuring food security in the region.

Large industrialized walnut orchards in Andijan region can be established on a cooperative basis. As an example of such an approach, entrepreneurs have the experience of combining efforts to plant and use walnuts, acquiring 2 hectares of land for agricultural entrepreneurship. Cooperation allows small producers to form large batches that serve to increase the value of the product, and they participate in all trade and economic processes of the product they grow. Thus, by reducing the activity of the shadow market, budget revenues will increase.

It is expedient to establish large industrialized walnut orchards in all regions of the region, which can significantly change the situation for the better, and to organize them in cooperatives of farms, agro-firms, small landowners.

Production and export of high-demand and highly efficient agricultural products in the world is one of the important directions of further development of the agricultural sector through the efficient use of land. If these cooperatives receive real mechanisms for the use of the resources given to them, it will be possible to radically improve the situation in the nut industry.

In the transparent system of procurement and export, the newly established procurement points will play an important role. By operating in the form of a service cooperative, they will be able to form wholesale batches of products, sell them on the local market or export them. This will help increase the welfare of the population by creating new jobs in rural areas.

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