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PERSPECTIVE DIRECTIONS OF ECONOMIC COOPERATION BETWEEN KAZAKHSTAN AND UZBEKISTAN IN THE VEGETABLE OILS SEGMENT

Abstract

The main purpose of this article is to demonstrate mutually beneficial cooperation between Kazakhstan and Uzbekistan in order to increase the competitiveness of products and improve the position of these countries in the world market of vegetable oils. During the study, factors and conditions of cooperation between Kazakhstan and Uzbekistan in the vegetable oil sector were considered. Concepts related to modernization were analyzed. Investment cooperation opportunities in the field of joint cultivation of crops in Kazakhstan for further export to Uzbekistan, the conclusion of a forward-looking agreement for the sale of early varieties of vegetables and potatoes to Kazakhstan was studied. Proposals for the creation of grain processing clusters for deep processing of Kazakh grains in Uzbekistan are given. Mutually beneficial nature of this cooperation as well as the importance of modernization of economic relations at all stages of the technical value chain are demonstrated, the main directions of scientific, technical and innovative modernization of the provincial and oil industries ensuring cost reduction, improvement of product quality, expansion and renewal of the product range are identified. The mechanism of joint efforts on the basis of creation of clusters of vegetable oils at the interstate level is proposed. The formation of clusters solves several systematic problems of industry and economy of both countries, increasing the volume of exports and the level of localization of products, improving infrastructure for storage, optimizing the transport of raw materials and products, the movement of goods and logistics processes, improving the quality of partner countries population life. The creation of clusters contributes to the formation of new industrial potential, the modernization and development of innovations in oil and local industries, the improvement of the quality of life of the population of both countries.

Key words: modernization, oil and fat industry, modernization of economic systems, world market, vegetable oils, cooperation between countries, cluster.

Introduction

In modern conditions, when Kazakhstan is developing in a crisis, the question has arisen about the priority development of certain sectors of the national economy.

Currently, the oil and fat industry of the Republic of Kazakhstan is not in the best condition, especially considering that most of the time the domestic giants in this area are idle or operate at 1/3

of their planned volume, which cannot but affect the price of the products sold. Oil and fat enterprises and enterprises consuming oilseed products, which previously brought large incomes to the economy of Kazakhstan, have reached a critical state and cannot, ensure the normal activities of their work collectives. They are forced to reduce production, leaving skilled workers and specialists without work.

In turn, after the collapse of the union and the transition to a market economy, it was necessary to restructure existing ones and create new economic ties, add to this the wholesale privatization of everything. As a result, a situation has developed where many (if not all) business leaders not only did nothing to create new ones, but also to maintain existing connections! This oversight led to a decrease in production volumes and loss of market share. Foreign producers of not only vegetable oil took advantage of the current situation

Only in the 90s, the area under ether bears decreased from 10.3 thousand to 5.3 thousand hectares. At the same time, the indifferent attitude on the part of government bodies allowed the domestic market to be saturated with low-quality, cheap oilseed products. If this trend is not stopped, then in the near future the state will lose the opportunity to replenish the list of products for export and to satisfy domestic demand for spicy and aromatic products.

Kazakhstan has strong potential for scientific support of the oilseed industry.

Since 1965, the Institute of Oilseeds and Medicinal Plants (formerly scientific and production association “Efirmaslo”) has been created here and successfully maintains the scientific and technical base, which is the only institution in the oilseed industry of the former Soviet Union and provides full scientific and technical support to all farms involved in the cultivation of oilseeds, its processing and production of vegetable oils: from selection and agricultural technology for cultivating crops to mechanization of cultivation, harvesting and processing technology.

The soil and climatic resources of Kazakhstan and southern Kazakhstan meet the biological and environmental requirements of oilseeds; ensure high yields and stable collection of raw materials.

However, Kazakhstan’s rich natural resources are not always used economically. Thus, due to careless, if not barbaric, treatment of land resources in Maktaral and some other areas of the region, the problem of salinization of soil and climatic resources arose. Warm-season oilseeds have recently been replaced by crops that could have been grown in other regions that are unsuitable or unsuitable for typical southern crops. The potentially great efficiency of cultivating essential oils is evidenced by the fact that when comparing the profitability of oilseeds and the main food crop – wheat – it was revealed that wheat from an area of 1 hectare gives a profit six times less than, for example, fennel.

There have been fundamental changes in the nature of global trade and global food demand in recent years. These changes cover both developed countries and countries that are developing, and are closely related to the increase in the world’s purchasing power of the population, increasing demand for quality food products, and increasing quality requirements.

The increase in consumer demand in most developed countries of the world is accompanied by an increase in production and an expansion of the range of oil and fat complex products. With the observed increase in the world share of trade in finished products, which are aimed at the end consumer: meat products, confectionery, drinks, ready-made meals, the share of trade in vegetable fats are increasing.

The greatest increase in the production of 17 types of vegetable oils and fats is observed in China – 1.6 million tons, or 13%. In the USA, Japan, and EU countries, the production rate of oils and fats is estimated from 0.4 to 1.9%. The population’s need for vegetable fats increased in the USA by 4.4%, in the EU countries by 4.6%.

The rapid growth rate of demand for vegetable oils and fats is largely explained by their increasingly expanding use in the food, pharmaceutical, chemical industries, and perfumes.

In this regard, oilseed products become an important factor in the export of countries producing them, because in some developed countries with limited natural resources, reducing product prices while simultaneously increasing consumer demand is achieved by importing them from other countries.

Against the backdrop of the emerging consumer demand of the population, the market for the production of oilseed products is currently still not stable.

The consequences of the reduction in the volume of global export resources of sunflower seeds will be most noticeable for the largest importers, primarily for the EU and Turkey.

It is possible that very soon EU countries will already depend on Argentine exports of sunflower oil seeds, and the size of Argentine exports, in turn, will depend on the actual volume of production. The prospects for the new harvest in South America remain unclear; however, this factor may play a decisive role.

The countries of the Near and Middle East can have a significant impact on the market not only for sunflower oil, but also for other oils in Europe. European vegetable oil exporters have expressed concern about the expansion of oilseed processing capacity in these countries, which are traditional importers of oil from Europe. Currently, it is planned to build 10 powerful processing plants in the countries of the Near and Middle East. When these enterprises reach their designed capacity, they may significantly undermine the position of European suppliers of edible vegetable oil in the future.

The oilseed market is closely interconnected. The decline in prices for oilseeds and their processed products has led to a reduction in Europe not only in the area under sunflower, but also in the area under rapeseed. As a result, the total global production of sunflower and rapeseed decreased by more than 5 million tones.

In Europe, this led to a decrease in processing volume and accordingly led to a decrease in the production of rapeseed oil and meal, and this in turn led to a reduction in export resources. Reducing carryover stocks of rapeseed will support and stabilize the situation for oilseeds and vegetable oils of other oilseeds, as these markets will lead to a partial shift in demand for soybeans and their products, as well as palm oil.

In developed countries, the efficiency of traditional production technologies and global trade models has been approaching its breaking point in recent years, which is reflected in the rapid rise in food costs. Due to the Covid-19 pandemic and the Russian-Ukrainian conflict, food security problems are worsening in the world, and annual productivity growth rates are declining. At the end of 2022, World Bank analysts expect food prices to rise by 22.9 percent. The most significant growth is expected in the vegetable oils segment – 29.7% [1].

The current circumstances on the world food market necessitate the adoption of measures to localize imported food products to Uzbekistan. At the same time, for Kazakhstan, filling emerging gaps in world markets and increasing export volumes, in particular fat and oil products, is a pressing issue. This fact determines the importance of studying the factors and conditions for sharing the potential of both countries in order to achieve a synergistic effect in increasing the competitiveness of the production of fat and oil products. This becomes even more important in the context of the transition of the development of New Uzbekistan and Kazakhstan to the path of innovation, defined as the most important goal of countries' policies in the field of technology and science development, the achievement of which becomes a necessary condition for the modernization of national economies.

Materials and methods

The article used general scientific methods of theoretical generalization, synthesis and analysis. Various literary sources, scientific articles and reference and analytical reports were studied on the topic of the study.

Main provision

In the modern world, economic modernization is of a model nature, and it is based on a model of innovative and technological development. Its extension to developing countries is related to the economic policies, priorities, needs and capabilities of each country. Today, new opportunities have opened up for the countries of Central Asia to take their place in the global vegetable oils market due to food shortages. Consequently, there is a need for scientific and technological modernization of the oil and fat industry at the interstate level, based on the modernization of economic cooperation and mechanisms of mutually beneficial cooperation. The purpose of this article is to substantiate the mutual benefit of this cooperation between Kazakhstan and Uzbekistan in order to increase the competitiveness of products and improve the positions of these countries in the global vegetable oils market.

In this case, we are talking about the modernization of economic relations between enterprises of Kazakhstan and Uzbekistan in the technological chain of creating added value for oil and fat industry products. There has been insufficient scientific research in this direction, both from Kazakh and Uzbek scientists.

Literature review

The south of North America is considered the homeland of sunflower, where it was domesticated approximately 4–5 thousand years ago. The Hopi and other local peoples used the seeds and the oil obtained from them for food, they also lubricated their hair and body with oil, paint was obtained from the husks and "petals," and some parts of the plant were used for medical and ritual purposes. In 1510, sunflower was exported to Spain and quickly spread throughout European gardens as an ornamental and medicinal plant, and in the time of Peter the Great it reached Russia. Attempts to use annual sunflower as an oilseed crop have been made at least since the beginning of the 18th century: for example, in 1716 in England, Arthur Bunyan was issued a patent for squeezing from its seeds "a good sweet oil, useful to all persons engaged in the production of wool, artists, tanners etc." [2]. There is also information about its breeding in this capacity in France, but there it gradually died out. In 1771, I.I. Lepyokhin pointed out that "sunflower seeds produce a fair amount of oil, the benefits of which are well known in Sardinia." In 1779, in the journal "Academic News", among the reports on the works of the "scientific Philadelphia Society" for 1769–1770, it was briefly mentioned about the possibility of obtaining oil "in an ordinary way" from sunflower seeds [3].

Although sunflower gradually spread in the south of Russia as a garden crop, its industrial processing into oil began only in the second quarter of the 19th century. In 1827, a certain Teves opened an oil mill in the Nizhny Novgorod province, but subsequently nothing was reported about it. In 1829, a peasant from the Voronezh province, Daniil Bokarev, noticed the similarity of the seeds in taste with pine nuts, from which oil was already extracted, sowed them in his settlement of Alekseevka and soon received the first oil from a handicraft press, which turned out to be pure and tasty. Fellow villagers immediately took over the initiative from Bokarev and began growing and processing sunflowers themselves. Already in 1841, more than 2,000 pounds of sunflower oil were exported, and the total production volume in Alekseevka by the mid-1840s reached 30 thousand pounds (about 500 tons). Sunflower culture quickly spread to neighboring counties, as well as to the Saratov province. In addition to food, the oil was used for lighting and for dyeing fabrics. In the mid-1860s. Voronezh province alone produced up to 920 thousand pounds of sunflower oil per year (15 thousand tons), Saratov – another 300 thousand pounds.

At the end of the 1860s the production of sunflower oil fell sharply due to massive damage to plants by the rust fungus Puccinia helianthi. Cultivated areas were reduced, factories were closed. In 1873, M. S. Voronin proposed effective measures to combat rust, which helped gradually restore oil production, but the "rust" level could not be achieved until the end of the 19th century. Then varieties resistant to rust and insects were developed, and production increased sharply: in 1913, Russia produced 11 million poods (180 thousand tons) of sunflower oil [4]. In 1912, V.S. Pustovoit organized the Kruglik experimental selection field in the Kuban region, which in 1932 was transformed into the All-Russian Research Institute of Oilseeds. Other breeding centers appeared in Saratov and Kharkov. Such popular sunflower varieties in the mid-20th century as "Peredovik", "VNIIMK 8931", "Zhdanovsky 8281" and others were developed. The oil content in seeds increased from 28-33% to 42–44%. One of the most pressing breeding problems at that time was resistance to broomrape.

With the growing popularity of sunflower oil, sunflower culture began to spread to other countries. Thus, in 1875, it was introduced by Mennonite immigrants to Canada, although it began to be grown there on a noticeable scale only in the middle of the 20th century; soon penetrated into the United States, but was used for a long time as a fodder plant. In the 1890s, Jewish immigrants from the Russian Empire brought sunflowers to Argentina, but even there the oil's economic importance was not recognized until 1941. However, over the last quarter of the 20th century, thanks to the expansion of cultivated areas and intensive development of hybrids, as well as due to the economic recession in the former USSR, Argentina became the world leader in its production and export. In the United

States, the rise of the sunflower in the 1960s was largely due to the rise of synthetic textiles, which led to a decline in the demand for cotton and, consequently, in the supply of cottonseed.

Currently, the issues of vegetable oil production are discussed in articles by foreign scientists like Noemí Echegaray, Mirian Pateiro, Gema Nieto, Marcelo R. Rosmini, Paulo Eduardo, Sichetti Munekata, María Elena Sosa-Morales, José M. Lorenzo and are one of the most dynamically developing sectors of world agriculture [5].

According to Chaoting Wen, Mengyu Shen, Guoyan Liu, Xiaofang Liu, Li Liang, Youdong Li, Jixian: vegetable oil is widely used, in particular, in cooking, food, pharmaceutical and cosmetic industries. The annual growth rate of global demand for vegetable oil from 2020 to 2025 was 5.14%. Compared with animal oils, vegetable oils are more popular with consumers due to their renewable use, good quality and lack of cholesterol [6].

The issues of competitiveness of the country's agricultural products are highlighted in the works of the foreign author Long Y, which depends not only on its ability to export agricultural goods, but also on the resilience of the agricultural sector itself. In the case of a country with a significant agricultural segment, it is important to determine the balance between increasing the international competitiveness of agricultural products and ensuring the sustainability of the agricultural sector [7].

In the publication of Kazakhstani authors Sh. Kantarbayeva, A. Kairbayeva, G. Rakhimzhanova, M. Mukhubayeva presented the results of a study of the development of the economy of Kazakhstan related to the level of production and economic growth in the agricultural sector. This attracts the attention of countries wishing to invest in the agro-industrial sector of the republic [8].

At the same time, it should be understood that much depends on the conditions that have developed in the production and export of agricultural products and provisions.

Results and discussion

An analysis of the cost of oil and fat complex enterprises has shown that almost all of them are extremely material-intensive. Based on significant production volumes, even a small reduction in the cost of raw materials per unit of production can have a tangible economic effect. This goal can be achieved only if there is an effectively established cost accounting and control system. One of the solutions to this problem, and not only, may be a change in the management concept. A transition to a non-linear concept is proposed, for example, "Lean Manufacturing" (LM). The advantage of this method is that the system consists of 80% of organizational measures and only 20% of investments in technology.

Lean manufacturing is a logistics management concept focused on optimizing business processes with maximum market orientation and taking into account the motivation of each employee. Lean manufacturing forms the basis of a new management philosophy and is one of the forms of non-linear management.

The main principles of LM are:

- excellent quality (delivery from the first presentation, zero defects system, detection and solution of problems at the origins of their occurrence);
- minimizing losses by eliminating all types of activities that do not bring added value to the customer, maximizing the use of all resources (capital, people, land);
- flexibility;
- establishing long–term relationships with the customer (by dividing risks, costs and information);
- self-organization, evolution, adaptation.

The objectives of the implementation of the Lean Manufacturing system are:

- minimization of labor costs;
- minimization of the timing of the creation of new products;
- guarantee of delivery of products to the customer;
- maximum quality at minimum cost.

The main tools of the Lean Manufacturing system are:

- visualization and standardization of the workplace;
- diagnostics of the production process;
- flow control;

- reduction of interoperable stocks;
- universal equipment maintenance;
- fast changeover technology;
- Built-in quality system.

The company under study currently does not have sufficient resources to carry out full-fledged work on the implementation of the proposed concept. Therefore, at the initial stage, we suggest using alternative tools within the framework of the Lean Manufacturing system. Such tools will be "Targeted Cost Planning" and "Operationally oriented cost calculation method".

The LM concept is aimed at reducing seven types of losses, which partially fall on the cost of production:

- overproduction of goods, i.e. the production of goods for which there has not yet been a demand;
- waiting for the next production stage;
- unnecessary transportation;
- unnecessary processing steps required due to lack of equipment, imperfection of the project, unnecessary initiative;
- availability of any but the minimum necessary supplies;
- unnecessary movements of people during work (in search of parts, tools);
- production of defects.

To implement the concept of lean manufacturing, it is necessary to establish effective analytical work. At Kazakh oil and fat enterprises, the department of planning and economic analysis is traditionally engaged in analytics. However, this work is not a priority, and most of the department's time is spent on solving current issues. At the same time, in addition to analyzing and stating the current state of affairs at the enterprise, continuous work should be carried out to improve economic activity.

The information prepared by the controlling service is intended for the Deputy Director for Economics and Finance, as well as for the General Director. We consider it advisable to subordinate it directly to the Deputy Director for Economics and Finance, since the heads of the finance department and the Department of Planning and Economic analysis are directly subordinate to him. Thus, the head of the controlling service will receive a fairly high status and independence from the heads of other financial and economic services.

The projected controlling service consists of five employees (controllers) with certain job responsibilities. We think that the following composition of the service will be optimal:

a) head of the controlling service;

The head of the controlling service is responsible for outgoing documents, analytical calculations and forecasts to his immediate supervisor, the Deputy Director for Economics and Finance.

b) controller – supervisor of workshops.

Due to the large amounts of information, two specialists should work in this position. One will be responsible for the workshops of the main production, the other – auxiliary. The duties of the workshop supervisor controller include:

- development of forms for collecting analytical information on workshops;
- collection of analytical (planned and actual) information from workshops (responsibility centers);
- processing and analysis of the data obtained, development of cost standards for workshops and maintaining their relevance;
- calculation of analytical indicators of the work of workshops and the enterprise as a whole;
- analysis of deviations of the actual data from the planned ones, identification of the reasons for the deviation;
- preparation of analytical reports for the Deputy Director General for Economics and Finance;
- expertise of management decisions related to the costs of supervised workshops.

c) the controller is a specialist in management accounting.

The field of activity of this specialist includes working with accounting and obtaining analytical data from accounting registers.

Responsibilities of the controller – specialist in management accounting:

- development of procedures for transferring data from accounting to the controlling service;

- control over the collection and analysis of actual accounting information;
- development of proposals to optimize the accounting process in accounting from the position of the analytical service;
- economic expertise of management decisions.

d) the controller is an information systems specialist.

Responsibilities of the controller – information systems specialist:

- assessment of the feasibility of automating controlling work at individual stages;
- evaluation of options and suggestions for automation of controlling work;
- calculations and justification of costs for automation of controlling work;
- development of forms for automated information collection;
- optimization of document flow in the enterprise;
- coordination of the work of the automation department in the field of automation of controlling work;
- assessment of the quality of automation systems for financial and economic activities and development of proposals to improve their work.

The positions presented are quite specialized. It is advisable to invite shop economists, economists of the planning and economic department, and the finance department to the position of curator of workshops. The main requirement for a management accounting specialist is theoretical and practical knowledge of accounting, the features and disadvantages of accounting in a given enterprise. It is advisable to entrust this work to a specialist from the accounting department. The controller is an information systems specialist – a qualified employee from the information technology department, the general office management department who knows in detail the workflow at the enterprise and is able to set the task of automating controlling work.

It is this division that will be the "guide" in the process of implementing LM.

Typical tasks of the controlling service are:

- organization, coordination and methodological support of planning and budgeting processes in the enterprise;
- organization, coordination and methodological support of the cost and income accounting system at the enterprise.

Obviously, a department specializing in cost management should have a modern methodological apparatus to perform its tasks. In this regard, we suggest using the "target costing" system as the main cost management tool.

The postoperative method eliminates the two biggest drawbacks of traditional accounting methods:

- lack of focus on cost savings and business process reengineering;
- the inability to accurately calculate the total production costs of an individual product.

The basic principle of cost calculation is the division of costs into direct and indirect (overhead) and the attribution of both types of costs to finished products. As a rule, in practice, there are no problems with the allocation of direct costs, since they can be directly attributed to the cost of a specific cost object.

Indirect costs are traditionally transferred to cost objects in proportion to the amount of labor, machine time, production volume, and sales. If the share of indirect costs in the cost of products (works, services) is small, the use of the traditional approach to cost justifies itself due to its simplicity and a slight error in the result. However, in modern conditions, with the improvement of production technology, reduction of its labor intensity and material intensity, as well as automation of processes, the share of direct costs decreases, and the share of indirect costs (for general management, marketing, financial management, personnel management) increases. Products that consume the least of the resource, in proportion to which indirect costs are distributed, will appear more cost-effective in calculations compared to products that consume more resources. Using an operational methodology for allocating indirect costs allows you to avoid these errors.

In order to more deeply determine the content of the process that ensures the development and effective growth of the economic complex, in our study we analyzed the concepts associated with modernization. Many scientific works of foreign and domestic economists are devoted to the study of the dialectical development of the concept of modernization. The approaches interpreted in them, depending on the research task we set, were combined into the following groups (table 1, p. 177).

Table 1 – Approaches defining the concept of modernization

№	Grouping of approaches	Contents of the approach
1	Modernization as a progressive change in economic and social relations	Modernization is a fundamental change in social relations, a radical institutional transformation of the production potential of society. Modernization consists of economic progress that leads to changes in society.
		The result of modernization should be the transformation of agrarian, traditional societies into industrialized, modern.
2	Modernization as a change in thinking	Modernization is characterized as a process of change in human consciousness, expressed in an unconditional belief in progress, a propensity for economic growth and the achievement of a worldview that characterizes readiness for change.
		Modernization is the process of realizing the potential of knowledge, which develops in accordance with the constantly improving world.
		Modernization is accompanied by giving priority to such values as science, knowledge, and achievements.
3	Modernization as improvement and development	Modernization changes will lead to the renewal and improvement of facilities taking into account today's standards and requirements.
Note: Compiled by the authors based on the sources [9, 10].		

The analysis given in the table of approaches shows that modernization is associated with the development of society, social, political and economic relations, a change in thinking in society towards the improvement and improvement of objects in accordance with the realities of the time. The above grouping of approaches confirms the possibility of modernizing the economic system and the resulting relations at the interstate level, which allows us to consider the modernization of economic relations between Kazakhstan and Uzbekistan in the segment of vegetable oils.

As part of the state visit of the President of Kazakhstan Kassym-Jomart Tokayev in December 2022 to Uzbekistan, a business forum with the participation of entrepreneurs from Uzbekistan and Kazakhstan started in Tashkent, where contracts and agreements worth more than $3 billion have already been signed. Particular attention was paid to cooperation in the field of agriculture; as a result, a substantial package was signed between the agro-industrial complexes of the two countries worth more than $1.3 billion [11]. This fact indicates the growing nature of innovative, scientific, investment, trade and industrial cooperation between Uzbekistan and Kazakhstan and the active implementation of the untapped potential of cooperation in the field of agriculture.

The possibilities of investment cooperation in the field of joint cultivation of agricultural crops in Kazakhstan for further export to Uzbekistan, the conclusion of forward contracts for the sale of early varieties of vegetables, herbs and potatoes to Kazakhstan, the creation of a grain processing cluster for the deep processing of Kazakh grain in Uzbekistan are being actively explored.

In 2022, the volume of mutual trade between these countries amounted to $1.7 billion, including exports – $241.4 million, imports – $1.47 billion. Main exports of Uzbekistan: vegetables, fruits, grapes, melons, legumes, eggs, confectionery, tourist services. The main import items of Uzbekistan are: grain products, fat and oil products, animal feed, food products, meat, seeds, confectionery, dairy products, tobacco products. Kazakhstan ranks first, with an indicator of 38.2%, among countries importing food products to Uzbekistan. Imports of vegetable oil in 2021 compared to 2020 increased by 2.6 times, margarine and margarine products by 16 times [12]. However, in 2022 there was a decrease in the export of sunflower oil by 6.26 thousand tons than in 2021.

The noted reduction in supplies to Uzbekistan is associated with an increase in purchases from Tajikistan. In total, during this period, of the 34.1 thousand tons of Kazakh sunflower oil exported, the two countries accounted for about 98%, while in the previous year this figure was estimated at 71%. According to experts, a decrease in supplies to Central Asian countries was caused by restrictions on the export of sunflower seeds and vegetable oil from Kazakhstan, which, in turn, stimulated the smuggling of raw oil [13]. The figure 1 (p. 178) shows a diagram of sunflower oil exports from Kazakhstan to Uzbekistan, thousand tons in the period from 2019 to 2022.

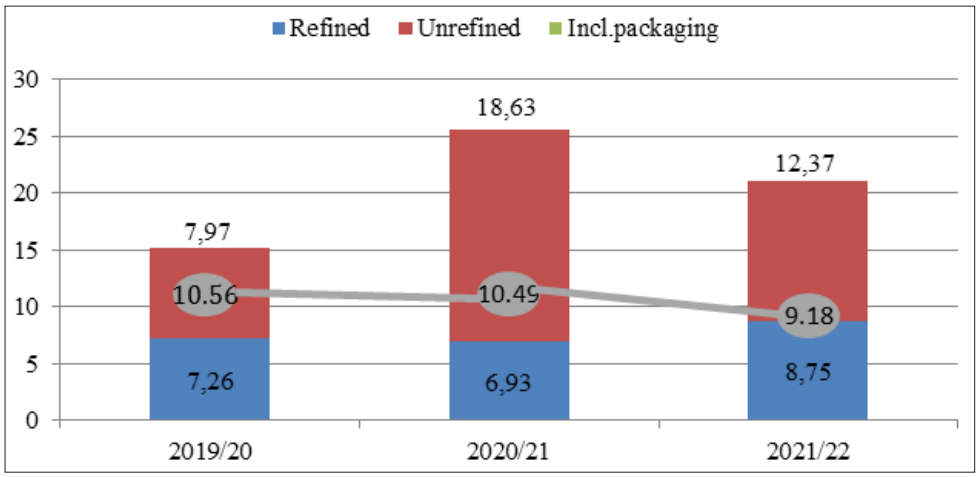

Figure 1 – Export of sunflower oil from Kazakhstan to Uzbekistan, thousand tons.

Note: Compiled from source [14].

Now what is exported is not the more expensive refined sunflower oil, which is subject to quotas, but a cheap semi-finished product that is not subject to restrictions – product code 1517909100 "Other fixed vegetable oils, liquid, mixed." Thus, using the example of Uzbekistan, it is especially clear how in September-December 2021 there was an uncharacteristic and inexplicable increase in the volume of supplies of products under this code; they grew from almost zero to 4,661.6 thousand tons from Kazakhstan. The expert believes that, with a high degree of probability, the goods exported under the code 1517909100 hide not a semi-finished product, but just ordinary vegetable oil [15]. This fact once again demonstrates the need to improve cooperation mechanisms between countries in the vegetable oil segment in order to prevent smuggling operations and its consequences. The state budget of Kazakhstan also suffers from this, because customs payments from the export of cheap products are much lower and farmers, since purchase prices for sunflower within the country decreased from 250 thousand tenge per ton in November 2021 to 180–185 thousand tenge per ton in March 2022. In addition, the current restrictions have led to farmers planning to reduce the area under sunflower, fearing that they will not be able to sell the new crop at a fair price.

As is known, the development of the oil and fat industry of the Republic of Uzbekistan was aimed at processing cotton seeds. The total production capacity was 3.6 million tons of raw materials per year. In recent years, as part of the program to ensure food independence, the oil and fat industry of Uzbekistan has undergone significant changes, both in terms of modernization of production facilities and technologies aimed at processing local non-traditional oilseeds – safflower, sunflower, flax, sesame and stone fruits. On a national scale, they began importing soybeans and mastered soybean processing technology.

The domestic consumer market of oil and fat products of the Republic of Uzbekistan is classified today as capacious and dynamically growing. Market development is determined by the annually growing volumes of consumption of oil and fat products, both by households and corporate food producers, as well as by the steady increase in the country's population. The average rate of vegetable oil consumption in the state consumer market alone is at least 14 kg per capita per year. In addition, the annual demand of the processing industry is about 250 thousand tons. Basically, these are the rapidly growing margarine production, culinary and processing industries. Annual population growth of more than 3% predetermines an increase in the growth of consumption of vegetable oils and the expansion of the geography of its production.

Today, there are more than 240 oil and fat enterprises operating in the Republic of Uzbekistan. It should be noted that the processing capacity of sunflower seeds by 2022 amounted to almost 1.1 million tons per year [16].

The head of state held a meeting on September 5, 2022, at which new opportunities for providing the population with food were identified. In particular, at the meeting it was noted that the annual demand for vegetable oil is 515 thousand tons, 46% of this volume is imported. To prevent a sharp rise in food prices, by order of the President, customs duties on the import of 22 types of food products, including vegetable oil, have been reset to zero until January 1, 2023. In addition, until the end of this year, mandatory labeling of imported food products in the state language is temporarily suspended, and the restriction on the participation of imported food in government procurement is lifted. The task has also been set to increase the area for growing food crops to 300 thousand hectares. and rationally place crops based on an analysis of population demand and imports.

Today, the biggest problem of oil and fat enterprises in Uzbekistan is the lack of raw materials. Because some large enterprises in the industry are not operating at full capacity, and the total processing capacity of non-traditional oil seeds is about 1 million tons. In Kazakhstan, on the contrary, the production capacity is 1.5 million tons, and the volume of raw materials is 6 million tons. Therefore, it is advisable to form oil and fat industry clusters, taking into account the complementarities of economies and the use of the resource base available in countries.

The analysis substantiates the mutual benefit of cooperation between Kazakhstan and Uzbekistan in developing their positions in the vegetable oils segment. In this vein, the partnership between Uzbekistan and Kazakhstan is reaching a qualitatively new level of development, opening up new horizons of interaction, and also making a significant contribution to the development of the economies of the two fraternal countries.

In this context, it should be noted that issues of food security and cooperation in the agricultural sector are gaining increasing priority within the framework of the Shanghai Cooperation Organization (SCO), at the summit of which, in September 2022 in Samarkand, it was noted that the key role in ensuring uninterrupted food supplies is transport system and logistics play a role. In this regard, the development of a network of used transport corridors, as well as the implementation of joint projects to create logistics centers for storage, processing and delivery of agricultural products to consumers, were discussed as one of the important areas of cooperation between the SCO countries. A promising direction is the further development of rail transportation of food to Uzbekistan (as well as to the CIS countries and China) within the framework of the specialized project of Russian Railways "Agroexpress" using accelerated container trips. This project is designed to speed up the passage of important, primarily food, cargo through the territory of Uzbekistan, Kazakhstan, Russia, as well as the return movement of trains with products [17].

Thus, we can confidently say that there are all the necessary conditions in both countries for the transition to a new level of cooperation and development of economic relations in the oil and fat industry based on the formation of joint clusters and agro-parks of vegetable oils.

The main goal of creating clusters of vegetable oils is the joint cultivation of oilseeds in Kazakhstan for further export to Uzbekistan, as well as their joint processing based on scientific and technological modernization. This provides for the modernization of economic relations, all processes along the technological chain of value creation, a mechanism for maximizing the opportunities and advantages of both parties to achieve a synergistic effect of production and increase competitiveness in the global vegetable oil market.

The consequence of combining efforts and resources will be a reduction in the cost of goods and an increase in the income of cluster enterprises, product quality, an increase in export volumes and the level of localized products, improvement of the storage infrastructure, transportation of raw materials and products, optimization of the process of goods distribution and logistics, ensuring comprehensive processing of raw materials and production of secondary products , which leads to a reduction in losses and environmental protection. As a result of clustering, based on studying the parameters of external consumer demand and scientific and technological modernization of production, it is expected to master the production of new types of products of a wide range, taking into account the growing need for an adapted (customized) product in the world market. The production of products based on vegetable oils (margarines, fats for special purposes (confectionery, baking, culinary), vegetable oils of pharmacological and cosmetological nature, dietary and therapeutic and prophylactic purposes, milk fat substitutes, cocoa butter substitutes and equivalents) is one of the most dynamically developing segments of the fat and oil industry [18, 19].

Most of the waste from oil and fat enterprises arises from the refining of raw vegetable oils. The main waste to be disposed of is stream, which is widely used in soap production. The creation of new cost-effective technologies is necessary to increase the level of waste utilization from oil and fat production, which will reduce the negative impact on the environment, reduce energy consumption, and increase production profitability.

As part of the clustering of interactions in the area of agricultural science, it is necessary to consider the issue of establishing scientific and technical cooperation between the Research Institute of Plant Production of Uzbekistan and the Laboratory of Oilseed Crops Breeding of the Kazakhstan Research Institute named after A. Barayev.

In the global market, the vegetable oil market is expected to grow from USD 358.14 billion in 2023 to USD513.44 billion by 2028, with an average annual growth rate of 7.47% during the forecast period (2023–2028) (figure 2).

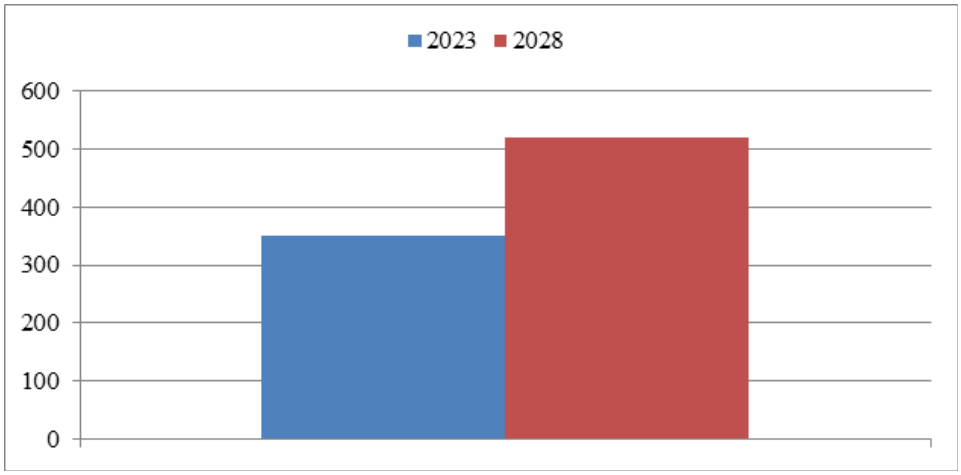

Figure 2 – Global vegetable oil market volume

Note: Compiled from source [20].

In the short term, the industry will depend on people's growing awareness of the health benefits of consuming vegetable oils, such as heart health control. Monounsaturated fats in foods such as olive oil, rapeseed oil, sunflower oil, hazelnut oil and almond oil have been proven to increase good cholesterol levels and minimize the risk of heart and cardiovascular diseases.

The Asia-Pacific region is the dominant region for the vegetable oil market worldwide, and in the Asia-Pacific region, China holds the largest share of vegetable oil consumption and production.

The Chinese vegetable oil market mainly includes palm, soybean, rapeseed, peanut, sunflower and olive oil. Over the past five years, soybean and palm oil have occupied the largest shares in the Chinese vegetable oil market. Wilmar International Ltd (Yihai Kerry), Cofco Corporation and Xiwang Food are among the largest edible vegetable oil companies operating in the Chinese and Asian markets.

Japan is another major player in the industry. Japan imports most of its olive oil from Southern Europe, which is used for cooking and non-food purposes. According to the U.S. Department of Agriculture, the volume of olive oil consumption in Japan amounted to about 75 thousand metric tons in 2021, compared with 69 thousand metric tons in 2020. Similarly, India is also taking flexible measures to be self-sufficient in edible oil. In August 2021, the government announced the establishment of the National Mission for the Production of Edible Oils for the Oil Palm to increase domestic production of oilseeds and achieve national self-sufficiency in vegetable oils [20].

The war between Russia and Ukraine has pushed vegetable oil prices to record high levels. The countries of the Black Sea region are significant exporters of sunflower oil. Thus, this military problem caused a sharp rise in the price of vegetable oil, and also caused a reaction from trade policies around the world, which further limited supplies and additional costs. According to the International Food Policy Research Institute, sunflower oil has increased by 40% since the invasion (tables 2 and 3, p. 181).

Table 2 – Production (1000 MT), Oilseeds, All countries. Forecast for 2023/2024. January 2024

Season 2023/2024	Harvesting area (1000 ГК)	Yield (tons/ hectare)	Import (1000 MT)	Export (1000 MT)	Final stocks (1000 MT)	Balance
Assessment January 2024	269824	2.45	192972	197352	131336	13.49%
Changes	-869 (-0.32%)	+0.01 (+0.41%)	+629 (+0.33%)	+552 (+0.28%)	-356 (-0.27%)	
Assessment December 2023	270693	2.44	192343	196800	131692	13.53%
Changes to 2022/2023	+3363 (+1.26%)	+0.07 (+2.94%)	-1540 (-0.79%)	-5254 (-2.59%)	+11227 (+9.35%)	
Note: Compiled by the authors based on the sources [21].						

Table 3 – Indicators of research results oilseed production in dynamics 2015–2023 (years)

Season 2023/2024	Harvesting area (1000 ГК)	Yield (tons/ hectare)	Import (1000 MT)	Export (1000 MT)	Final stocks (1000 MT)	Balance
2022/2023	266461	2.38	194512	202606	120109	12.69%
2021/2022	260923	2.34	178442	179455	117468	12.96%
2020/2021	252693	2.41	190276	192395	116033	12.71%
2019/2020	246410	2.36	189927	191768	112670	12.43%
2018/2019	248485	2.42	168110	172085	134460	15.14%
2017/2018	247970	2.35	176512	177498	118691	13.63%
2016/2017	237384	2.43	167859	171608	110679	13.2%
2015/2016	233615	2.25	154315	153931	93375	12.05%
2014/2015	236883	2.28	143593	147524	95958	12.55%
Note: Compiled by the authors based on the sources [21].						

The largest buyer of coconut oil is the United States – $1.2 billion or 20% of all global supplies. In second place is China, whose share of purchases is 13%. Coconut oil supplies are mainly carried out by Indonesia, which controls almost 45% of the market. Olive oil on the world market is supplied mainly to Italy and the United States – $2 billion and $1.2 billion, respectively, which corresponds to 25% and 15% of the market. At the same time, Italy is also one of the major suppliers of olive oil, exporting $1.6 billion worth of these products. Other major olive oil suppliers are Spain ($3 billion) and Tunisia (almost $1 billion). Rapeseed oil is mainly purchased by the United States ($1.45 billion or 25% of global supplies), and Canada supplies $3 billion or 30% of the market). Palm and soybean oil (the largest in terms of trade volumes on the world market) are exchange-traded commodities. In the period 2013–2015, palm oil prices fell from $857 to $623 per ton. Starting in 2016, prices resumed their growth. Experts expect that in 2025 the price of palm oil will be $800 per ton. A similar pattern is observed for soybean oil – in the period 2013–2015, prices decreased from $1,057 to $757 per ton, and by 2025, the price is projected to rise to $1,000 per ton. In general, both production and global trade in oilseeds are expected to grow in the long term.

In January–March of this year, 171.4 thousand tons of refined and unrefined vegetable oil was produced in Kazakhstan – immediately 23.7% more than a year earlier.

Refined oil production decreased by 8.1% over the year, to 36.1 thousand tons; unrefined oil output, on the contrary, increased by 36.3%, to 135.3 thousand tons.

Regionally, most of the oil was produced in the East Kazakhstan region: 17.3 thousand tons of refined and 46.1 thousand tons of unrefined. Abai region and Almaty are on the second and third lines for the production of unrefined oil, Almaty and Shymkent are on the production of refined oil.

The production of such types of vegetable oil as refined and unrefined soybean (an increase of 4.7 times per year, up to 6.8 thousand tons), safflower (an annual increase of 4.1 times, up to 1.5 thousand tons), rapeseed (3.2 times, up to 22.2 thousand tons), unrefined sunflower (plus 40% per year year, up to 102.2 thousand tons).

The production of refined sunflower oil (by 22.2%, to 27.5 thousand tons) and cotton oil (by 24.9% per year, to 3 thousand tons) has significantly decreased.

According to the results of January-February of this year, local companies provided demand (sales in the domestic market plus exports) for vegetable oil by 79.7%, against 82.6% a year earlier.

Local production in the corresponding period increased by 28% over the year, to 111.8 thousand tons. The volume of imports increased by 54.3%, to 28.4 thousand tons. The share of imports, respectively, amounted to 20.3% of resources, compared to 17.4% a year earlier.

Oil exports immediately increased by 43.4% over the year, to 53.5 thousand tons, or 38.2% of available resources. The sale of vegetable oil in the domestic market of the country amounted to 86.7 thousand tons – 26.7% more than a year earlier.

Local companies provided demand for sunflower oil directly by 83.7%, compared to 81.8% a year earlier. 41.7 thousand tons of sunflower oil was exported – 1.9 times more than a year earlier. Sales in the domestic market increased by 0.4% to 61.1 thousand tons.

By the end of April this year, the cost of vegetable oil increased by 8.6% over the year. Including sunflower oil rose in price by 8.3%, olive oil – by 20.6%.

Regionally, vegetable oil prices increased the most in the Karaganda region: by 17.9% over the year. Astana and Mangystau region were also among the three anti-leader regions. The lowest annual growth was recorded in the Almaty region: by 3.2%.

Sunflower oil has raised in price the most in Karaganda, olive oil – in Pavlodar region. The lowest increase in prices for sunflower oil was recorded in the Almaty region, for olive oil – in Ulytau [22].

Conclusion

Based on the above, we can conclude that the formation of a cluster of vegetable oils at the level of two countries will allow solving the main systemic problems characteristic of the economy of the oil and fat industry of partner countries. Clusters are assigned to solve the following important tasks:

- optimization of the industry's supply of raw materials and the use of production capacity;
- construction of oil extraction plants with modern equipment and infrastructure;
- reconstruction and modernization of existing oil and fat plants in order to equip them with modern lines (transesterification and fractionation) for deep processing of vegetable oils and fats, production of milk fat substitutes, solid fats with a low content of trans acids;
- creation of enterprises for the production of high-protein food products and feed for livestock, poultry and fish farming;
- creation of enterprises for the production of oils for the pharmaceutical and perfumery and cosmetics industries;
- creation of a large logistics network and provision of oilseed raw materials to existing enterprises in the oil and fat industry;
- cooperation in the implementation of international product quality standards;
- cooperation in the field of seed production and cultivation of oilseeds in the difficult climatic conditions of the republics.

The creation of clusters contributes to the formation of new industrial potential, modernization and development of innovations in the oil and fat industry, and improving the quality of life of the population of the two countries.

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ӨСІМДІК МАЙЛАРЫ СЕГМЕНТІНДЕГІ ҚАЗАҚСТАН МЕН ӨЗБЕКСТАННЫҢ ЭКОНОМИКАЛЫҚ ЫНТЫМАҚТАСТЫҒЫНЫҢ ПЕРСПЕКТИВАЛЫҚ БАҒЫТТАРЫ

Аңдатпа

Мақаланың негізгі мақсаты өнімнің бәсекеге қабілеттілігін арттыру және осы елдердің өсімдік майларының әлемдік нарығындағы позицияларын жақсарту мақсатында Қазақстан мен Өзбекстан арасындағы ынтымақтастықтың өзара тиімділігінің негіздемесі. Зерттеу барысында өсімдік майлары сегментіндегі Қазақстан мен Өзбекстан ынтымақтастығының факторлары мен шарттары қаралды; жаңғыртуға байланысты тұжырымдамалық ұғымдар талданды; Өзбекстанға одан әрі экспорттау үшін Қазақстанда ауыл шаруашылығы дақылдарын бірлесіп өсіру саласындағы инвестициялық ынтымақтастық мүмкіндіктері пысықталуда, көкөністердің, көк және картоптың ерте сорттарын Қазақстанға өткізу үшін форвардтық келісімшарттар жасасу; ұсыныстар берілді Өзбекстан аумағында қазақстандық астықты терең өңдеу бойынша астық өңдеу кластерін құру бойынша; осы ынтымақтастықтың өзара тиімді сипаты, құн жасаудың технологиялық тізбегінің барлық кезеңдерінде экономикалық қатынастарды жаңғыртудың маңыздылығы негізделген; өзіндік құнын төмендетуді, өнім сапасын арттыруды, ассортиментті кеңейту мен жаңартуды қамтамасыз ететін майлы-май саласын ғылыми, технологиялық және инновациялық жаңғыртудың негізгі бағыттары айқындалған; мемлекетаралық деңгейде өсімдік майлары кластерлерін құру негізінде күш-жігерді біріктіру тетігі ұсынылған. Кластерлерді қалыптастыру екі елдің саласы мен экономикасының бірқатар жүйелік проблемаларын шешуге мүмкіндік береді, нәтижесінде өнімнің экспорты мен локализация деңгейінің ұлғаюына, шикізат пен өнімді сақтау, тасымалдау инфрақұрылымын жақсартуға, тауар қозғалысы мен логистика процестерін оңтайландыруға, серіктес елдер халқының өмір сүру сапасын жақсартуға қол жеткізіледі. Кластерлер құру жаңа өнеркәсіптік әлеуетті қалыптастыруға, май өнеркәсібі салаларындағы инновацияларды жаңғыртуға және дамытуға, екі ел халқының өмір сүру сапасын арттыруға ықпал етеді.

Тірек сөздер: жаңғырту, май өнеркәсібі, экономикалық жүйелерді жаңғырту, әлемдік нарық, өсімдік майлары, елдердің ынтымақтастығы, кластер.

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ПЕРСПЕКТИВНЫЕ НАПРАВЛЕНИЯ ЭКОНОМИЧЕСКОГО СОТРУДНИЧЕСТВА КАЗАХСТАНА И УЗБЕКИСТАНА В СЕГМЕНТЕ РАСТИТЕЛЬНЫХ МАСЕЛ

Аннотация

Основной целью статьи является обоснование взаимовыгодности сотрудничества между Казахстаном и Узбекистаном в целях повышения конкурентоспособности продукции и улучшения позиций этих стран на мировом рынке растительных масел. В ходе исследования рассмотрены факторы и условия сотрудничества Казахстана и Узбекистана в сегменте растительных масел. Проанализированы концептуальные понятия, связанные с модернизацией. Прорабатываются возможности инвестиционного сотрудничества в области совместного выращивания сельхозкультур в Казахстане для дальнейшего экспорта в Узбекистан, заключение форвардных контрактов для реализации ранних сортов овощей, зелени и картофеля в Казахстан. Даны предложения по созданию зерноперерабатывающего кластера по глубокой переработке казахстанского зерна на территории Узбекистана. Обоснован взаимовыгодный характер сотрудничества, важность модернизации экономических отношений на всех этапах технологической цепочки создания стоимости. Определены основные направления научной, технологической и инновационной модернизации масложировой отрасли, обеспечивающие снижение себестоимости, повышение качества продукции, расширение и обновление ассортимента. Предложен механизм объединения усилий на основе создания кластеров растительных масел на межгосударственном уровне. Формирование кластеров позволит решить ряд системных проблем отрасли и экономики обеих стран, в результате чего достигается увеличение объемов экспорта и уровня локализации продукции, улучшение инфраструктуры хранения, транспортировки сырья и продукции при оптимизации процессов товародвижения и логистики и улучшении качества жизни населения стран-партнеров. Создание кластеров способствует формированию нового промышленного потенциала, модернизации и развитию инноваций в отраслях масложировой промышленности, повышению качества жизни населения двух стран.

Ключевые слова: модернизация, масложировая промышленность, модернизация экономических систем, мировой рынок, растительные масла, сотрудничество стран, кластер.