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**BEET SUGAR ENTERPRISES IN KAZAKHSTAN: BALANCED MANAGEMENT, RESERVES**

**ҚАЗАҚСТАННЫҢ ҚАНТ ҚЫЗЫЛШАСЫНЫҢ КӘСІПОРЫНДАРЫ:  
ТЕҢГЕРІМДІ БАСҚАРУ, РЕЗЕРВТЕР**

**СВЕКЛОСАХАРНЫЕ ПРЕДПРИЯТИЯ КАЗАХСТАНА:  
СБАЛАНСИРОВАННОЕ УПРАВЛЕНИЕ, РЕЗЕРВЫ**

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**Annotation.** *The goal* is to analyze production indicators of sugar beets and sugar for 1990-2023, to recommend measures to increase volume of sugar industry products. *Methods* - statistical, on the basis of which primary data on production of beet raw materials and sugar, its consumption per capita, export and import, and foreign trade turnover are collected. *Results* - the authors note that development of beet-sugar subcomplex is accompanied by stable decrease in quantity of this product, resulting in reduction in acreage and decrease in yield. The deterioration of parameters is due to high cost and low profitability of crop produced, outdated technical base, the use of low-quality seeds, problems with irrigation, and insufficient capacity of sugar factories. The current situation has a direct impact on the demand for sugar, which is met through imports and raw sugar obtained from processing. State measures aimed to increase sugar from domestic raw materials, set out in the Comprehensive Plan for the Development of Sugar Industry in the Republic of Kazakhstan for 2022-2026, were considered, in the framework of which it is provided to ensure the enterprises with unused agricultural land suitable for cultivating sugar beets within a radius of 150 kilometers to ensure their own raw materials taking into account the requests of the processors. *Conclusions* - the implementation of the set tasks will reduce sugar import dependence and saturate the domestic market with own products. At the same time, logistics issues, reducing cost of transporting finished products, and financing construction of railways need to be worked out.



included in food baskets that measure the standard of living of different groups of people.

The special role of this product is that it ensures the country's food security, so sugar beet is produced even in places where its production is practically inconvenient due to its low productivity. Governments of any country will not refuse to produce sugar from their own raw materials and will not replace it with imported products even under favorable conditions of the world market.

One of the foods that is necessary is sugar. Sugar production in the country is mainly produced from two types of plants - sugar cane and sugar beet. Natural conditions in the southern region of the republic are ideal for growing the only domestic raw material for sugar production - sugar beet. Sugar production is carried out in beet sugar complexes consisting of beet farms and sugar factories.

Until recently, beet sugar production was not formed as an independent organizational and economic managed system. Because in recent years, this industry, despite loud statements and attempts to revive it, is in a deplorable state.

The result of this attitude led to an imbalance in the functioning of its main units and productions, a disruption of organizational and economic relations between them, a weakening of the state's influence on the reproduction process, the curtailment of interregional ties, the criminalization of the sugar market and the presence of a large number of intermediaries.

Knowing all the problems, the government of the Republic of Kazakhstan developed a Comprehensive Plan for the Development of Beet Sugar Production. The comprehensive plan is designed for five years. During this time, it is planned to increase the volume of sugar production to 250 thousand tons annually, reduce the share of imports from 58 to 17 percent, and increase the supply through processing of domestic raw materials from seven to 43 percent.

To consolidate these plans and implement the "New Kazakhstan" Strategy, it is necessary to adopt the Law of the Republic of Kazakhstan "On State Regulation of the Sugar Market".

**Literature Review**

All over the world, sugar is included in food baskets that measure the standard of living of different segments of the population. The special role of this product is that it ensures the food security of the country. The governments of which countries do not refuse to produce sugar from their raw materials and do

not replace it with imported products even under favorable conditions of the world market.

An important role in ensuring raw material independence and increasing the competitiveness of domestic sugar production is assigned to the analysis of the current state of beet - sugar production, with the help of which the strategy and tactics of the enterprise are developed, the main trends and patterns of development of existing interrelationships in the sugar industry are determined, plans and management decisions are substantiated, control over their implementation is carried out, the results of the activities of beet and sugar enterprises are evaluated.

Sugar beet is a biennial plant. In the first year, a fleshy rhizome and leaves without flowers and seeds are obtained from seeds. In the second year, leaves sprout from the roots of beets that have overwintered and planted in the ground in spring, flower stems 1.5-2.0 meters high are formed, on which flowers develop, and then the seeds ripen. Sugar is only produced from beets in the first year of development (factory or industrial beets).

In Kazakhstan, sugar beets first began to be planted in the 90s of the XIX century, but beet sowing did not take root in the Republic for various reasons. Sugar beet crops were revived in the 30s of the twentieth century. Not only beet cultivation, but also the production of beet seeds has developed rapidly. In parallel with the development of beet farms, the construction of the first sugar factories began.

A significant increase in fuel prices, fertilizers, irrigation water tariffs led to a low profitability of sugar beets, despite the efforts of beet growers.

Problems of moisture supply caused by the shortage and loss of Water Resources. Water loss in certain areas of Agriculture has reached 40% due to the actual degradation of more than 60% of water management facilities.

Outdated equipment leads to a violation of sowing and harvesting deadlines, excessive spending on fuel and spare parts, crop loss and other negative consequences for agricultural producers in general.

Availability of nutrients-30%. To obtain a high yield, it is necessary to regularly restore soil fertility, which is impossible without the use of mineral and organic fertilizers (The national project for the development of the agro-industrial...) [1].

The problem of ensuring food security has been and remains the subject of comprehensive scientific, methodological and practical study for many years. (Suweis S., Carr

J.A., Maritan A. et al.) [2], (Godfray, H.Ch.J, Beddington, J.R., Crute, I.R et al.) [3]. Studying this problem, attention should be focused both on the forms of food security organization and on the designation of vectors for improving import substitution (Sun Zhongxiao, Scherer Laura, Tukker Arnold et al.) [4], (Von Grebmer K., Bernstein J., Nabarro D.) [5].

In particular, the problems of ensuring food security at the global, national and regional levels, as well as at the level of individual households, have been reflected and developed in the scientific works of many Kazakh and foreign scientists (Bručienė Indrė, Savickas Dainius, Šarauskis Egidijus) [6], (Olga Fishkis, Jessica Weller, Jörn Pöllinger et al.) [7].

#### **Materials and methods**

The article used general scientific methods of theoretical generalization, synthesis and analysis. In order to conduct a comprehensive review of the topic, the article employed a range of materials and methods. The primary methods used in this review were theoretical generalization, synthesis and analysis. These methods allowed the researchers to critically examine and evaluate the existing literature on the topic, and draw meaningful conclusions. To gather relevant information, the researchers extensively studied various literary sources, scientific articles, and reports.

These sources were carefully selected to ensure that they provided reliable and up-to-date information related to the study's topic. The researchers aimed to include a wide range of sources to obtain a comprehensive understanding of the subject matter. The literature review process involved a systematic examination of the selected materials.

The researchers thoroughly analyzed the content of each source, identifying key concepts, theories, and findings that were relevant to the study. They then synthesized the information from these sources, organizing and integrating the data to identify patterns, trends, and gaps in the existing knowledge. Statistical data describing the level of development of the beet sugar complex and scientific works and regulatory acts providing the achieved results of development and ways to increase them were taken as a theoretical and methodological basis.

Particular attention is paid to modern methods organization of analytical work, planning, analysis in the marketing system, investment analysis, assessment of economic potential and business. Given modern analytical techniques that improve effectiveness of economic and financial analysis.

#### **Results**

The main raw material of domestic sugar production is beetroot. Beetroot is a temperate plant and is found wild along the Mediterranean Sea.

Beetroot is a plant of a temperate climate, which is found wild along the coast of the Mediterranean Sea. Beetroot cultivation began 3 000 years ago. It was grown primarily for salad preparation, that is, its leaves were used, but not its roots. Over time, it was possible to grow beets with fleshy roots, which became the most valuable part of the plant. Sugar beet roots have been obtained as a result of many years of selection of coneshaped, white-skinned and fleshy food beets. Sugar beet differs from food beet in the larger root weight, higher sugar content and thicker flesh.

Sugar beet is a biennial plant. In the first year, a fleshy root and flowerless and seedless leaves are obtained from the seed. In the second year, beet roots planted in the ground, in spring it will sprout leaves, flowers will develop, and then 1.5-2.0 meter tall flowering stalks will appear. Sugar is produced only from beets in the first year of development (factory or industrial beets).

In the process of sugar production, additional products such as defecate, sludge, right molasses, and butter are obtained from the waste left over from beets. Beet pulp, which is not used in the production of low-value sugar from beets, is formed in the form of crushed beet residues.

We can say that beetroot is one of the most profitable crops from the economic point of view, as it is used in various directions in the national economy. Not only sugar is produced from beets, but also fertilizers that fertilize the land and fodder for livestock are obtained from it. If beet is well cared for, it can compete with potatoes, cotton, and grain crops.

In Kazakhstan, sugar beet was planted for the first time in the 90s of the 19th century, but beet planting did not take root in the republic for various reasons. Sugar beet crops were revived in the 30s of the 20th century. Not only beet cultivation, but also beet seed production has developed rapidly. Along with the development of beet farms, the construction of the first sugar factories began. Before the beginning of the Great Patriotic War, the cultivated area was 14.5 ha, the productivity was 246 t/ha, and the total production reached 357.0 tons. The sugar industry of the republic fully meets the people's need for sugar and exports it to the republics of Siberia and Central Asia.

The USSR government established a large beet growing base in Kazakhstan within a few months to cover the costs of beet sugar production in Ukraine and Russia, as well as to supply the army and the country with sugar. As a result of the taken measures, the beet planting area increased from 14.5 hectares in 1941 to 46.4 hectares in 1942, which made it possible to increase the total harvesting by 2.5 times.

After the end of the war, it was decided to reduce beet crops in the republic, so in 1946, the cultivated area for this crop was 18.0 ha. Such a decision was due to the need to raise the level of agricultural technology, mechanize production, and rebuild the country's irrigation system. All tasks set for beet sugar production during that period were fulfilled: specialized state farms were organized, existing irrigation networks were renewed, as a result, beet fields began to increase again, new beet pro-

cessing plants were built, and the production capacity of existing plants was expanded. In the mid-seventies, sugar beet cultivation was carried out not only in Almaty and Zhambyl oblast, but also in South Kazakhstan, Kyzylorda, East Kazakhstan and Semey oblasts. Eight sugar factories with a total capacity of 22 tons per day were operating in the republic.

The duration of sugar factories operation with domestic raw materials was 125-150 days, and in some years it was 180 or more. However, not all the planned measures for the improvement of beet farming were implemented in full, and in the 80s, the amount of planting began to decrease, which, accordingly, affected the total yield of sugar beet. This trend continues to this day. The dynamics of the main indicators of sugar beet are presented in as shown in the table.

Table - Indicators of sugar beet production between 1990-2022 in the Republic of Kazakhstan

Year	Sowing area, thousand ha	Yield, centner/hectare	Production thousand tons
1990	43,6	239	1043,7
1995	40,8	91	371
2000	22,5	154	272,7
2005	17,5	209,2	311
2010	11,2	174,3	152,0
2015	9,2	232,5	174,1
2016	12,6	285,5	345,0
2017	17,4	274,4	463,2
2018	17,4	305,3	504,5
2019	15,2	324,5	485,5
2020	15,2	323,2	466,3
2021	14,5	275,5	332,2
2022	10,2	270	305,7

\* Note: compiled by the authors based on the source (Bureau of National Statistics Agency...) [8].

From the table above, we can see that the cultivated area has decreased from 43.6 to 10.2 thousand hectares or by 76.6%. At the same time, the maximum planted area for this crop was 85.1 thousand hectares in 1992, and the minimum in 2014 was 1.2 thousand hectares.

In certain years of the considered period, the growth of cultivated areas was due to the following:

1. "Comprehensive program of sugar beet production and sugar production for the period up to 1995" was adopted in 1990-1994.
2. The 2008-2012 program for the development of beet farming and sugar production was launched in Zhambyl and Almaty oblasts.
3. The state program for the development of the agro-industrial complex of the Republic of Kazakhstan for 2017-2021 was implemented.
4. The program for the development of the country's agro-industrial complex until 2020 was adopted.

5. Due to the limitation of financial resources, settlements between beet processors and producers of agricultural goods were carried out by selling beets and giving sugar instead.

6. In 2016, the policy of subsidizing a hectare of sugar beet planting was implemented.

7. One ton of the sold product was subsidized by sugar factories and the state budget. In the period under review, factories first paid 8,10,12,17 thousand tenge per ton, then 20 thousand tenge, and the final payment of factories was equal to 30 thousand tenge per ton of beet delivered in 2022, including 15 thousand tenge for factories and 15 thousand tenge for the state.

8. Subsidizing the purchase of mineral fertilizers, herbicides and other fertilizers, reducing the cost of water for irrigation, developing seed production, reducing the cost of fuel and lubricants and other inventory values, reducing the cost of processing this crop in pro-

tected soil, as well as to pay the interest rate for the leasing of white agricultural machinery and support in the field of insurance.

The reduction in the size of cultivated fields was due to the following reasons:

- \* various types of agricultural enterprises and peasant (farm) farms were created instead of collective farms and state farms dissolved by the privatization of the agricultural sector. Peasant farms with weak material and technical base had the largest share of 91.3% among all economic subjects;

- \* high cost and low profitability of sugar beet production. Direct costs per 1 hectare of sugar beet area ranged from 900 to 1.0 million tenge on average. A significant increase in the price of fuel, fertilizers, irrigation water, despite the efforts of beet growers, led to low profitability of sugar beet;

- \* problems of moisture supply caused by shortage and loss of water resources. Due to the actual wear and tear of more than 60% of water management facilities, the water loss in some agricultural areas has reached 40%.

The analysis of productivity of sugar beet showed that it increased very little from 239 to 270 t/ha or 13.0%. At the same time, the highest yield of this agricultural crop was 324.5 t/ha in 2019, and the lowest was 77 t/ha in 1994.

Many factors affect the yield of sugar beet. Beet yield mainly depends on the following conditions:

- natural and climatic conditions-15-20%. Seed germination temperature is 10-12°C, growth and development is 20-22°C. Seedlings die at -4, -5°C;

- soil type and its treatment 10-15%. Sugar beet grows well in black soil and clay soil. Tillage begins in the fall, plowing and fertilizing, followed by spring plowing and herbicide application, followed by seeding, establishing crop density and pest protection, row cultivation, and harvesting;

- absence of sufficient number of agricultural machinery in the economic entities. According to the Ministry of Agriculture of the Republic of Kazakhstan, there are 147.7 thousand tractors, 38.1 thousand combines, 4.7 thousand sowing complexes, 13.3 thousand reapers, 76.8 thousand seeders and more than 300 thousand suspended and trailed tools for soil cultivation. Average wear and tear of the entire fleet of agricultural machinery is 76%. Obsolete machinery leads to disruption of sowing and harvesting periods, excessive costs of fuel and spare parts, crop loss and other negative consequences for agricultural producers in general;

- soil fertilizing substances should be around 30%. Regular monitoring of soil fertility and restoration of the previous conditions will provide conditions for obtaining a high yield. For this, it is necessary to use organic and mineral fertilizers in the necessary amount. For sugar beet, nitrogen (ammonium nitrate or urea) in the amount of 100-120 kg/ha, phosphorus (ammophos, nitroammophos, superphosphate) - 50-60 kg/ha, potassium (potassium sulfate) - 100-150 kg/ha, depending on the previous crops and soil type, kg/ha of fertilizers should be introduced. In turn, the application of forty tons of manure to 1 hectare of arable land, depending on the type of soil, provides an additional yield of beets from 127 to 206 t/ha.

In some years, not only the decrease of the cultivated fields, but also the decrease of their amount per hectare was observed. Thus, in 1995, 36 kg of mineral fertilizers (based on 100% nutrients) and 0.5 kg of organic fertilizers were applied to 1 hectare of sugar beet, which is much lower than the standard doses of fertilizers.

*Crop rotation.* Crop rotation helps control pests, diseases, and weeds, as well as the accumulation of moisture and nutrients in the soil. Proper crop rotation, usually four years between beet plantings, can increase yield per unit area and reduce its cost. As a rule, beets are sown irregularly and, in most cases, without maintaining crop rotation. In addition, the practice of continuous cultivation of sugar beet for three years reduces its productivity by 60-90 t/ha, and after eight years by 270-360 t/ha (Food, Beverage and Grocery Overview...) [9].

Seed varieties and quality - by 30-50%. Today, high-quality sugar beet seeds are produced by one of the seed-producing farms in the Almaty region of the country - "Kazakh Scientific Research Institutes of Crops and Plant Breeding" and "Kamkorlyk" Limited Liability Company. At the same time, LLP "Kazakh Agriculture and Crop Production" LLP produces from 1.5 to 4.0 tons of seeds, and LLP "Kamkorlyk" from 7 to 10 tons annually. This amount of seed production does not satisfy the beet growers of the country. Farmers mainly sowed low-quality seeds of this crop in their fields.

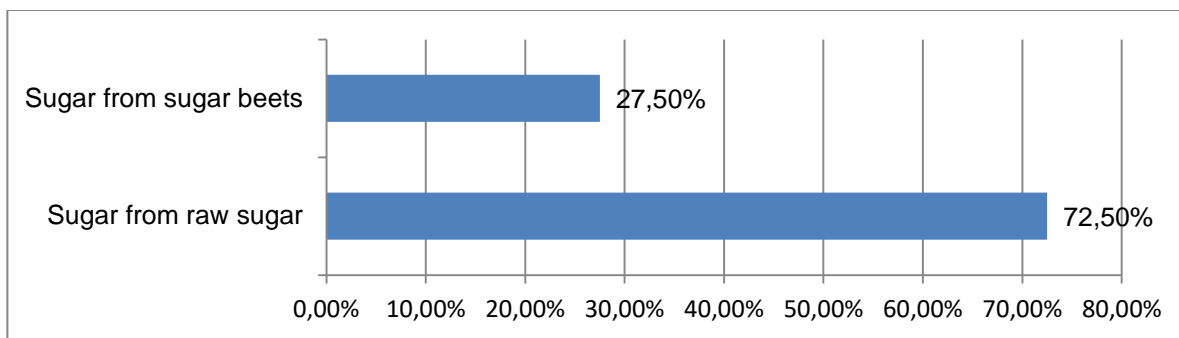
Lack of qualified personnel due to the timing of sowing sugar beet. It is known that a 1-day delay in sowing results in a 1.0% reduction in sugar yield. Changes in sugar beet acreage and production have affected the yield of this crop. For example, the volume of sugar beet production decreased from 1 043.7

thousand tons to 305.7 thousand tons or 70.7%, and the lowest volume of the produced product was 23.9 thousand tons in 2014.

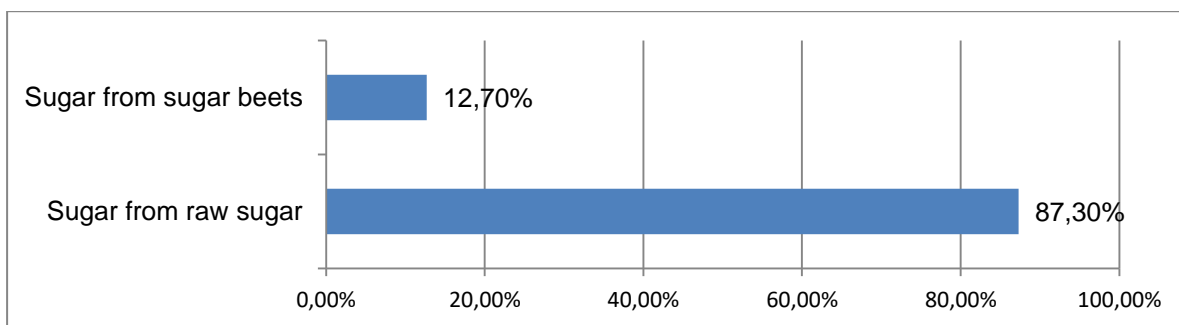
Reduction of the volume of beet production depends on the size of the field and its productivity. As mentioned before, we all know that sugar beet is the main raw material for sugar production in the country.

Considering the dynamics and structure of sugar production in Kazakhstan, we can show, that the volume of sugar produced in

the country last year was 319.1 thousand tons. 87.8 thousand tons of it were produced from beets, 231.3 thousand tons from imported sugar raw materials. Sugar production decreased to the level of 286.4 thousand tons in 2022. Thus, the share of sugar obtained from imported raw materials in the country increased by 14.8% and reached the level of 87.3% of the total amount. In turn, the share of beet sugar decreased from 27.5 to 12.7%. As shown in the figure 1, 2.



Note: compiled by the authors based on the source (Bureau of National Statistics Agency...) [8].  
Figure 1- The share of sugar produced from sugar cane and beet in 1990,%



Note: compiled by the authors based on the source (Bureau of National Statistics Agency...) [8].  
Figure 2- Share of sugar produced from sugar cane and beet in 2022, %

The production of sugar per person in the country decreased by 4.6 kilograms, that is, by 24.1%. Compared to last year, sugar production in beets decreased by 65.4%, and sugar production from imported raw materials decreased by a very small amount by 8.6%. This situation indicates that the country is dependent on imports. Today, the production of sugar products cannot meet the demand of our population for this product. According to the indicators of the organization of sugar processing and food industry of the country, the consumption of sugar during the year amounted to 500 thousand tons. For this reason, consumption in the country is mainly covered by white sugar, which is transported from the allied countries and other foreign countries.

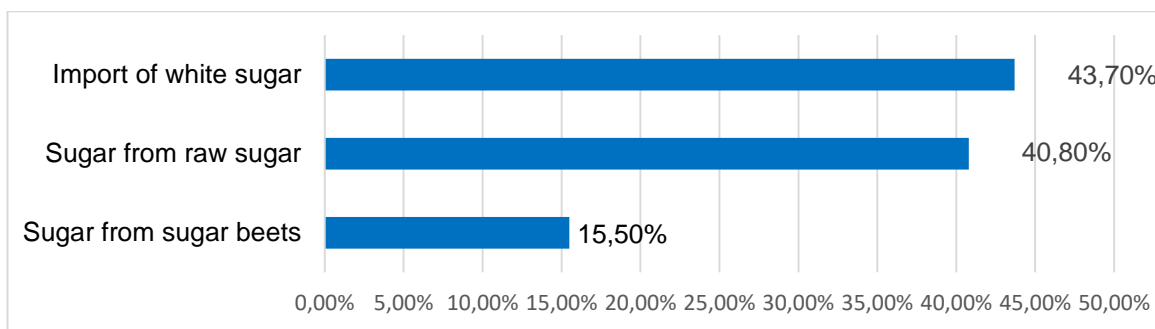
The maximum volume of sugar consumption in the country took place in 1990, after which it decreased to 300.2 thousand tons in 1995, and from 2000, its increase to 555 thousand tons was observed. Despite the growth of sugar consumption during the considered period, the volume of sugar consumption decreased by 10 thousand tons. This in turn affected per capita sugar consumption. This indicator decreased from 33.6 to 28.2 kg or 16.1% in the country. In addition, the consumption of imported white sugar decreased from 14.7 to 13.6 kg. Here, we must not forget that along with the consumption of sugar from domestic raw materials, the largest share comes from imported raw materials and imported sugar.

Thus, in 1990, per capita sugar consumption was 15.5% from domestic raw materials,

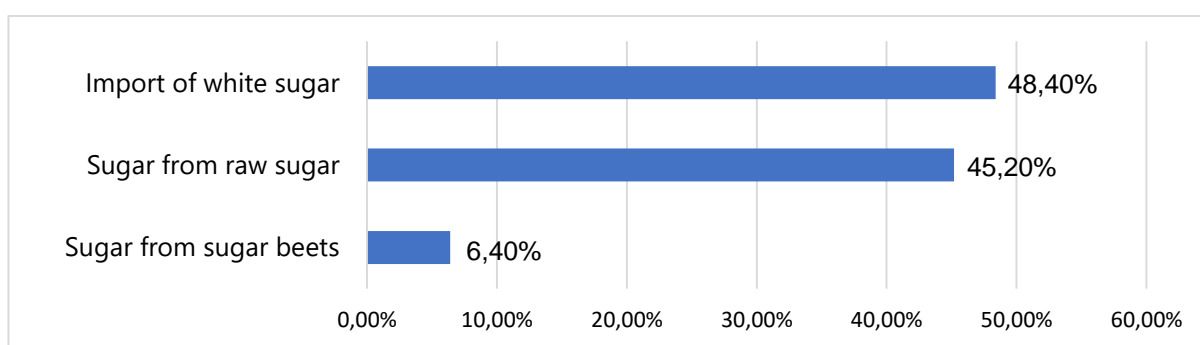


40.8% from sugar cane, and 43.7% from white sugar imports, that is, the total share of imports is 84.5%, and in 2022 it will be 9 in-

creased by 1% and reached the level of 93.6%. As shown in the figure 3, 4.



Note: compiled by the authors based on the source (Bureau of National Statistics Agency...) [8].  
Figure 3- Sugar consumption per capita in 1990



Note: compiled by the authors based on the source (Bureau of National Statistics Agency...) [8].  
Figure 4 - Sugar consumption per capita in 2022

Dynamics and analysis of the sugar market in Kazakhstan, study of production volumes by region, review of import and export supplies, price statistics, compilation of ratings of regions of the Republic of Kazakhstan, analysis of manufacturers, conclusions and market forecast for 13 years according to the negative, inertial and innovative scenario.

During the considered period, Kazakhstan imports white sugar every year. Mainly sugar is imported from Russia, Belarus, Moldova, Poland, Czech Republic, etc. Thus, in 2015, the main supplier of white sugar to the country was Moldova, which accounted for 32.1 thousand tons or 33.4% of the total volume of imported white sugar, followed by Belarus - 18.8 thousand tons or 19.6%, Poland - 15 thousand tons or 15.6%, the Czech Republic - 11.6 thousand tons or 12.1%.

Currently, the main suppliers of sugar are Russia and Belarus. The main import of sugar belongs to Russia - 88.3%, the Republic of Belarus - 11.5% and other countries - 0.15%. The 2022 special ban on sugar and sugar cane imported from abroad, including Russia and Belarus, had a negative impact on the sugar market of Kazakhstan. The price of

sugar in the region of the Republic has increased significantly this year. In the summer of 2022, the price of sugar increased to 800-900 tenge per kilogram. Now the price has stabilized a little and is 440 tenge per kg, it is the blood of 1 995 times more than the price.

**Discussion**

Expensive foreign sugarcane usage and supply costs have also led to an increase in the wholesale and retail prices of sugar in the country. In addition, domestic sugar producers with more than 50% of their existing equipment in need of upgrading have had a significant impact on the cost of sugar. The high price of sugar was influenced by the value added tax equal to 12.0% in Kazakhstan and 10.0% in Russia and, in turn, the high cost of energy consumed with bank interest.

Thus, in the report of the International Sugar Organization, it was noted that since Kazakhstan's own production cannot meet domestic needs, it will still need to import sugar from countries on the world market (Sugar crops. Sugar beet) [10].

Domestic sugar is mainly exported to Kyrgyzstan, Tajikistan, Uzbekistan, China, Mongolia, etc. The share of exports in the to-



tal amount of produced sugar fluctuated from 10.5% in 1995 to 1.3% in 2021, and in 2022 the share of exports was quite small and equal to 0.1 thousand tons (International Sugar Organization...) [11].

All beet growers are provided with subsidies for the processing of their products, for the purchase of seeds, special mineral fertilizers, special means of protection of beets, for irrigation needs, for the effective use of crops and their processing (The Alberta Climate Information Service) [12].

Despite the state support measures planned in these documents, in 2022 the level of self-sufficiency in domestic sugar from sugar beet and sugarcane raw materials should reach 80% (the national project for the development of the agro-industrial complex of the Republic of Kazakhstan for 2021-2025) or in 2023 - 55% , but they were not achieved. In addition, the growing import of cheap Russian sugar did not allow sugar factories to sell their products at a fair price, which in turn did not allow them to raise the purchase price of sugar beets (Master plan "Development of the processing industry...") [13].

Taking into account the above, at present, the Ministry of Agriculture developed a comprehensive plan for the development of the sugar industry for 2022-2026, the purpose of which is to increase sugar production from domestic raw materials by increasing sugar beet crops and modernizing sugar factories with technological equipment renewal, expanding production capacity to supply the domestic market with products (Decree of the Government of the Republic of Kazakhstan...) [14].

Among the state support measures, tax preferences take a very important place. Scientists of agrarian universities prove the effectiveness of tax preferences in the field of sugar. The use of tax preferences in the field of sugar makes it possible to achieve stable supply of domestic sugar to the country's population (Kaldiyarov D.A., Burnasheva V.R., Esengazieva S.K.) [15], (Svyatova O.V., Dorokhova N.V., Bykanova S.A. et al.) [16].

### Conclusion

1. In the period under consideration, in 1990-2022, the cultivated area decreased by 4.3 times, and the production of sugar beet decreased by 3.4 times, but the productivity of this crop increased by only 1.1 times. In some years of this period, there are sharp changes up or down in acreage, yield and sugar beet production volume.

2. During the considered period, sugar production decreased by 10.2%, of which the share of sugar produced from domestic raw materials decreased from 27.5 to 18.8% or 14.8%, and sugar production from sugar cane

decreased by 72.5 increased by 87.3% or 14.8%. Sugar production per capita also decreased by 24.1 percent or 4.6 kg.

3. Sugar consumption of the country's population decreased by 1.8% or 10 thousand tons during this period. Per capita sugar consumption also decreased by 16.4% or 5.5 kg. This decrease is due to an 8-fold increase in the retail price of finished products. Sugar consumption in the country is provided by imported sugar and sugar produced from raw sugar.

4. One of the biggest problems in the market of Kazakhstan, in order to increase the production of sugar and its consumption, a special comprehensive plan for the development of the sugar industry for 2022-2026 has been developed, within the framework of this plan, the special cultivation area of sugar beet will be increased by 38 thousand hectares, thanks to this, the total production of sugar beet will increase to 1 800 thousand tons breeding is planned. If we realize these goals, we can increase sugar production by 250 tons, increase domestic sugar production from 7% to 43%, and reduce the foreign share of white sugar imports from 58% to at least 17%.

**Author's contribution:** Yerseitova Aigul: formulation of ideas, goals and objectives of the study, development of methodology, planning of research stages, loading material into an electronic system; Abildaev Sultan: data systematization, comparative analysis; generalization of research results, formulation of conclusions, interpretation of research results; Stefan Dyrka: collection and analysis of experimental data, writing the text of the manuscript, editing and finalizing the text of the manuscript, working with graphic material.

**Conflict of interests:** the author declares that there is no conflict of interests.

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