https://doi.org/10.26565/2410-7360-2024-60-32 UDC 339.137:637.1

Received 23 April 2024 Accepted 25 May 2024

# Problems of optimizing the production and export of environmentally friendly consumer products in Azerbaijan

## Ilgar Khalilov 1

PhD (Geography), Associate Professor,

<sup>1</sup> Azerbaijan State University of Economics, Baku, Azerbaijan,

e-mail: xalilov.ilqar@inbox.ru, \(\bar{\pi}\) https://orcid.org/0000-0001-7617-9439;

### Farhad Eminov 1

PhD (Geography), Associate Professor,

e-mail: eminov-f@rambler.ru, phttps://orcid.org/0000-0001-8747-7802

#### **ABSTRACT**

**State of the problem.** In the article, it is justified that the provision of a green economy based on environmentalization, modernization, innovation and new technologies in the production and processing of agricultural products leads to a radical improvement of production, protection of natural capital and ecosystem services, and reduction of pollution and greenhouse gas emissions. It was noted that the regulation of agricultural production systems in the country requires the expansion of agricultural practices that increase productivity and production, contribute to the protection of ecosystems, adaptation to climate change, extreme weather events, droughts, and floods.

Research object. It is the production, processing, consumption and export of agricultural products of Azerbaijan.

The purpose of the study is to promote the production of ecologically clean and export-important consumer products in Azerbaijan and the stimulation of its export. Introducing the country to the world with branded products, attracting foreign investments to this field, increasing the population's interest in the agricultural field, and attracting innovative technology to the field are also considered important. It is the determination of the damage caused by the impact on the agricultural sector and nature due to the degradation of the growing environmental components. Minimizing losses at this stage and optimizing the development of the agro-industrial complex is one of the main factors.

**Methodology.** Generalization, historical, statistical, systematic analysis and comparison methods were used in the preparation of the article.

**Scientific novelty of the research.** Implementation of the production and processing of ecologically clean agro-industrial products that do not harm human health and the environment, regular monitoring of the ecological condition of the soil, and the provision of increasing the production and assortment of ecologically clean export-oriented food and light industrial products.

Research results. In the article, it is explained that the development of the green economy in Azerbaijan is an integral part of the state policy, and it occupies an important place in the state administration, on the example of export-oriented food and light industrial products. It is noted that the sustainability of the development of the green economy acts as a criterion for the production of competitive products of the state, which contributes positively to the provision of people's vital needs.

**Keywords**: green economy, environmentally friendly, production and consumer products, agriculture, wine and juice production, silk and carpet, mineral waters.

In cites: Khalilov Ilgar, Eminov Farhad (2024). Problems of optimizing the production and export of environmentally friendly consumer products in Azerbaijan. Visnyk of V. N. Karazin Kharkiv National University, series "Geology. Geography. Ecology", (60), 42-430. <a href="https://doi.org/10.26565/2410-7360-2024-60-32">https://doi.org/10.26565/2410-7360-2024-60-32</a>

**Introduction.** Agriculture occupies one of the main places in the production of consumer products in Azerbaijan. Agriculture is the main driver of food and light industry production [3]. Agricultural practices directly affect natural resources and ecosystem services [6]. Agriculture accounts for 70% of the country's fresh water consumption and consumes the majority of drinking water [4]. Intensive agricultural use of land in the country results in land degradation, which occurs both due to a decrease in the ability of the land to provide ecosystem products and services, as well as unsustainable agricultural practices, overgrazing, deforestation, and improper land use. Currently, 43% of the country's soil resources have been eroded, 500 thousand ha have been moderately or highly degraded as a result of salinization, compaction, and chemical pollution [15].

Agricultural intensification is strongly associat-

ed with biodiversity loss, land use change and forest cover reduction [1]. Forests host the majority of terrestrial biodiversity [2]. Depletion of land, water and biodiversity in Azerbaijan is slowing the growth of agricultural productivity needed to meet the rising food demand associated with climate change [17]. Additional pressure on natural resources and ecosystems in the country can hamper food production and food security. Increasing volatility in food prices will lead to increased hunger and poverty [18]. To prevent this from happening, there is a strong need to strengthen efforts that effectively address productivity and environmental trade-offs [19].

Although the transition to a green economy is difficult to ensure sustainable development in Azerbaijan's agriculture, a number of indicators should be taken into account in this field. Thus, the green economy is considered a system of economic activity related to the production, distribution and consumption of goods and services that lead to the improvement of human well-being in the long term without exposing future generations to significant environmental risks and environmental deficiencies. Creation of additional jobs, increase in production volume, creation of new market relations, expansion of trade have a positive effect on the Gross Domestic Product (GDP) [5]. A wide range of measures aimed at eliminating or at least reducing the risks caused by climate change make a significant contribution to ensuring food security [7]. Agriculture is a highly localized activity that varies across multiple agro-climatic conditions [20]. Therefore, the solution to the problem of sustainable development and the transition to a green economy should be adapted to local conditions.

1. Dynamics of production and export of organic food industry products. The sustainable development of agriculture in Azerbaijan can be determined by environmental health, profitability, and an environment of social and economic equality. These include ensuring that agriculture is not harmful to the environment. At the same time, soil productivity, profitability, sustainability, soil health, water use, fertilizer and pesticide risk, biodiversity, decent employment, food security and land ownership play a key role. It also allows producers to track the progress of sustainability in agriculture across all three dimensions of sustainable development, i.e. environmental health, profitability, social and economic equity.

However, significant challenges need to be overcome to ensure sustainable agriculture in the country. It is necessary to ensure the increase of agricultural production and the management of environmental protection at the same time as the strengthening of environmental sustainability in agriculture [8]. These include promoting the adoption of sustainable technologies and improved farming practices, setting the right incentives within the country and leveraging international trade for sustainable development.

The production of wine and juice drinks in Azerbaijan is a promising field that has received an additional impetus for development with the introduction of the state policy on import substitution. Therefore, in recent years, wine and juice production is carried out in both large and small enterprises. However, in order to produce a product that will be in demand in the market, it is necessary to ensure its quality. For this, it is necessary to strictly observe high technology in the production process.

Pomegranate is one of the important export agricultural products of Azerbaijan. Pomegranate grows in the dry subtropical climate of Azerbaijan.

The taste of pomegranate is sweet and sour. Pomegranate is so specific that it cannot be confused with anything else.

Azerbaijan is continuously developing its economy in this field, the development of entrepreneurship is supported at the state level, processing industrial enterprises based on modern technologies are created, and the consumer products produced in these enterprises are exported to the world market. Pomegranate juice and pomegranate wine produced in Azerbaijan are exported to countries such as CIS, European Union countries, North America, China, Japan, Malaysia, UAE, Israel. Pomegranate products of major companies of the country have been certified organic by the KIWA GmbH Institute of the Federal Republic of Germany. At the same time, it received USDA Organic, Kosher certification, ISO 22000: 2005 Food Safety Management System, ISO 9001: 2008 Quality Management System and Halal Certification. Due to organic ISO certificates, the demand for the company's products in the world market is very high. There are 100 hectares of organic pomegranate orchards in the country. Pomegranate juice and wine grown here have a unique taste.

Due to the application of the most modern technology in the industrial enterprise, the quality of pomegranate juice and pomegranate wine meets world standards and is recognized as the national brand of Azerbaijan by exporting its high-quality products.

Experts from the California School of Medicine concluded that natural pomegranate juice is the best antioxidant drink [10]. It not only fights free radicals more effectively than red wine and green tea, but also cleanses the body of "bad" cholesterol [9]. They proved that 100% pomegranate juice is more effective than red wine, green tea, orange, grape and blueberry juice in preventing oxidative processes in the human body [12]. It has 20% higher oxidation potential than other drinks [11]. Pomegranate juice, enriched with vitamin C and tannin, primarily prevents the development of heart diseases and some types of cancer [13, 14].

The technology of making pomegranate wine at the enterprise is little different from the production of grape wine: the fruits are peeled, the seeds are separated and their juice is pressed, and then it is filled into tanks for fermentation. Fermentation is stopped after about a month when the alcohol content reaches 6-7%. Some wines are stored in oak barrels that grow in the flora of Azerbaijan. Pomegranate wine differs from grape wine in terms of color and taste. Pomegranate wines in Azerbaijan are mainly known as sweet and semi-sweet. Azerbaijani pomegranate is known for its quality not only in the region, but also in the world. Goychay re-

gion specializes in pomegranate growing. Pomegranate is consumed fresh, and pomegranate wine and pomegranate acid are also produced from it. Pomegranate contains tannins, so it is used to tan skin and make dyes. The pomegranate plant is also widely used in medicine for the preparation of various medicines. Pomegranate is a very profitable field. Thus, the first Azerbaijani consumer product sold in America was the "Grant" branded wine [21].

One of the important places in the production of consumer products in Azerbaijan is the enterprise located in Agsu district, known for juice and wine processing. White wine named "Kahreba" and pink wine named "Rubai Rose" produced by the plant are among the products exported to the world market. All products produced in Gabala, one of the ancient cities of Azerbaijan, have been awarded ISO 9001:2000, HACCP, ISO 14001:2004 international quality certificates. Equipped with advanced European technologies such as Padovan (Italy) and Tetra Pak (Sweden), the plant has an annual fruit processing capacity of 300,000 tons, and an annual fruit juice and nectar production capacity of 210,000 tons. About 100 products are produced in 7 production lines of the plant. Among them, "Jala", "ZOLOTOY SAD", "Natura" and "Baghdan" are the main brands. The entire production process meets environmental, sanitary-hygienic, safety norms and international standards. The plant has passed ISO 9001-2008 and ISO 22000 FSMS certification for quality, safety and management standards. At the same time, the plant produces organic pomegranate concentrate and pomegranate juice. ECOCERT certification was carried out for the sale of those products in the European and American markets [26].

A special brand was created to continue the traditions of caviar production in Azerbaijan, as well as to restore the Caspian ecosystem. Baku Caviar caviar, prepared by traditional method without using any artificial additives, is a real natural Azerbaijani black caviar. Black caviar is produced according to CITES certificate and ISO 1361-83, ISO 3004-1-86 international standards. Seven types of sturgeon fish are bred in the Samukh village of Barda region and in the Upper Karabakh channel. In terms of income, black caviar is second only to oil in Azerbaijan. Considering this, it is of particular importance to give special importance to entrepreneurship in the field of fishing, to give subsidies to this field, to make investments, and to apply innovations. The fact that a kilogram of black caviar in the world market is higher than a thousand US dollars requires special attention to be paid to the development of this field.

For the first time, tea planting in Azerbaijan began at the end of the 19th century, in 1896, when amateur M. O. Novoselov created experimental tea

plantations in Lankaran region. The development of tea cultivation in the Soviet period led to the fact that in 1928-1929, tea seedlings were replanted in Lankaran and Zagatala zones, and from 1932-1934, tea began to be cultivated in industrial-based plantations. In 1937, the first boxes of Azerbaijan tea were produced.

The Joint Stock Company occupies an important place in the modern production and consumption market for tea plants in the Republic of Azerbaijan. Azerbaijan tea is one of the eco-friendly consumer products produced by the joint-stock company. The first enterprise that Azersun invested in Baku was the "Sun Tea" tea factory in 1994. The factory produces black and green tea, fruit teas. The company exports tea products under the "Final", "Maryam", "Blendo", "Azerchay", "Giz Galasy" and "Teksun" brands that meet high hygienic requirements to the CIS countries. For the first time in Azerbaijan, Sun-Tea Azerbaijan received the ISO-9002 quality certificate in 1999, and the HACCP certificate confirming the absence of physical, biological and chemical hazards in 2003 [22].

"Lankaran Tea Factory No. 1" and "Astara Tea-2" OJSC primary tea processing enterprises included in the Joint Stock Company also received the certificate of the well-known European IMO-Market Research Institute. This certificate gives Azerbaijani tea the status of a bio-product and confirms that the tea complies with the requirements of biotechnology determined by the European Union during its cultivation, processing and packaging [24].

The company's packaging facilities operate in Lankaran and Astarada regions of Azerbaijan. The eco-tea packaged in those enterprises is brought to the world market under the brand "Azerchay" with the trademark "Made in Azerbaijan".

"Yashil Chay ( Green tea)" LLC has about 150 hectares of green tea plantation in Lankaran. Since 2011, green tea plantations of the high-yielding "Colchida" variety have been established here. Fields are irrigated using a Dutch sprinkler system. More organic fertilizers are used in the cultivation of tea plantations, which makes the grown tea completely ecologically clean.

The raw materials used by the enterprise in the production of dry tea are supplied from plantations in Astara and Lankaran regions, which are subtropical regions of Azerbaijan. No chemical additives are used during the processing of tea grown in ecologically clean conditions. Ecological observations are carried out by the German company "LACON" in the river areas. A tea factory was also built in the Astara region based on the project of the Republic of Korea company. The factory has the capacity to process 10 tons of green tea per day. Astara tea factory was awarded ISO 9001 and ISO 14001 certifi-

cates in 2016 [23].

Azerbaijan is a country rich in mineral waters of various composition. There are high-quality both table and healing mineral waters in the country. The region of Nakhchivan is better known for its abundance of mineral waters. Sirab, Badamli, Darıdag, Vaikhır, etc. mineral waters here have been famous for many years.

"Sirab" mineral water was awarded the gold medal "For high quality in work experience" at the international forum held in Geneva, Switzerland in May 2005, and the gold medal at the XII international exhibition held in the Republic of Ukraine in October 2009. In February 2010, he was awarded a silver medal at the XVII international exhibition held in Moscow, the capital of the Russian Federation, and in 2011, he was awarded gold medals again at the international exhibitions held in Almaty, Republic of Kazakhstan. Since the entire production process at "Sirab" Open Joint Stock Company is organized in full accordance with the requirements of the ISO quality management system and food safety, the enterprise was awarded ISO-22000 and ISO-9001-2008 compliance certificates. In total, the enterprise produced 3.3 million bottles of mineral water. The main part of the extracted water, or 87%, is used to meet the needs of the population within the country, and the remaining 13% is exported to the republics of Russia, Ukraine, Belarus, Turkmenistan and Lithuania. The export of "Sirab" mineral water and its unique position in the market are due to its high quality and therapeutic value [25].

"Gadabey Mineral Waters" LLC of Azerbaijan engages in production based on ISO 14001-2004,

ISO 22000-2005, ISO 9001-2008 compliance standards. The enterprise produces "Slavyanka-1" and "Gadabey" brand mineral waters. Those mineral waters are exported to Russia, Belarus, Kazakhstan, Kingdom of Bahrain and Iraq. Taking into account the demand for water, in 2010, an enterprise equipped with new technologies according to world standards was commissioned in Zahmat village of Gadabey district. The lemonade factory has been operating since 2014.

As can be seen from the table, in 2015-2022, fruits and vegetables increased from 132 thousand tons to 184 thousand tons, but the production of fruit and vegetable juices decreased from 148 thousand tons to 54 thousand tons [Fig. 1].

During that period, natural grape wine increased 5.5 times from 194 thousand dkl to 1080 thousand dkl. The production of non-alcoholic beverages and tea increased almost twice [Fig. 3].

The analysis of the export of those products shows that fruit and vegetable preserves have increased approximately 3 times, and fruit and vegetable juices have increased 2 times over the years 2015-2022. There was no significant change in the export of natural grape wine, while the export of tea increased twice [Fig. 4].

Azerbaijan is an extremely favorable country for ecological farming, as it has a favorable climate, soil and water resources in a wide geographical area. In our country, which is rich in product diversity, all geographical regions are famous for certain products. In addition, the domestic market has the capacity to provide the necessary materials for organic agriculture, and there is also a significant consumer

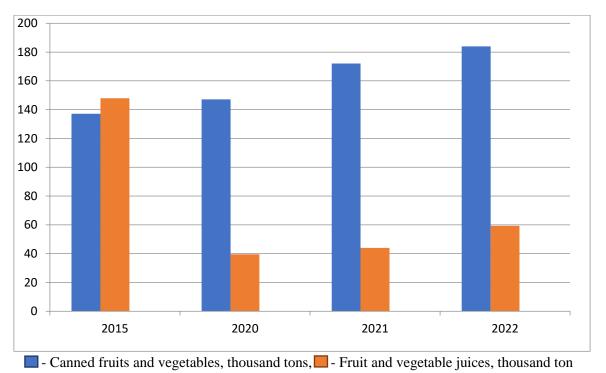


Fig. 1. Production of food industry products for 2015-2020 [18, 19, 20]

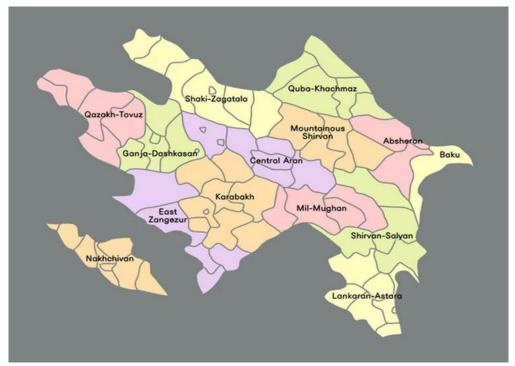


Fig. 2. Economic Region of Azerbaijan

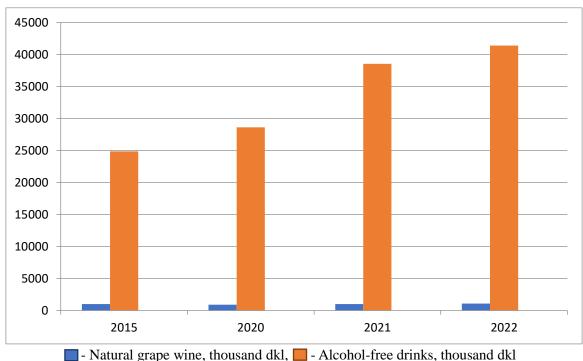


Fig. 3. Production of food industry products for 2015-2020 [18, 19, 20]

potential that will demand organic products produced in the domestic market. For example, the results of research conducted by Turkish researchers are typical for Azerbaijan.

2. Optimizing production and export of environmentally friendly and competitive light industrial products. "Azeripak" LLC, located in the city of Sheki, has a special place among light industries in Azerbaijan. The enterprise has 5 main production areas such as raw silk cocooning, weaving,

dyeing, spinning and twisting. High-quality raw silk, silk scarves, silk scarfs and cotton yarn are produced on equipment manufactured in Germany, Poland, and the Netherlands installed at the enterprise. The produced products are exported to Russia, Turkey, Iran and Turkmenistan. During the archaeological excavations conducted in the territories of Azerbaijan, among the remains of clothing made of silk in the excavations of the 3rd millennium BC, there is reason to say that it existed in ancient times

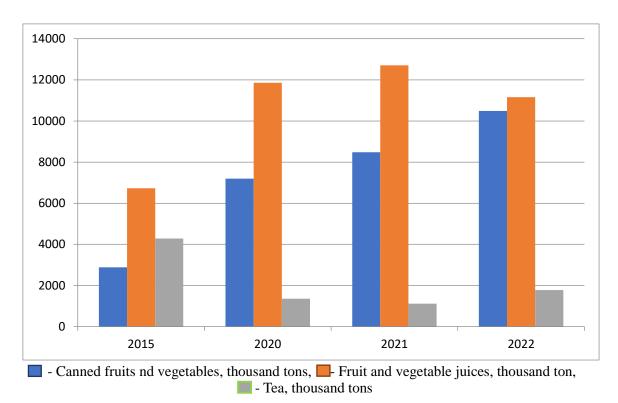


Fig. 4. Export of some food industry products for 2015-2022 [18, 19, 20]

as a form of clothing belonging to the Azerbaijani people. In Sheki, hand loom weaving has a history of nearly 500 years. In addition to Sheki, kelaghayi, the national headscarf of Azerbaijani women, is also woven in Basgal, Ganja, Shamakhi, Lahij, Ordubad and Khanabad. However, those kalagayis differ from each other in terms of color, decorative elements, and texture characteristics. These are "Bastanigar", "Gelinlik", "Golden", "Mikhayi", "Pea", "Green-black", "Olive", "Violet", "Lily of the mouth", "Lily of the mouth". At the meeting of "UNESCO's Intergovernmental Committee on Intangible Cultural Heritage" held on November 26, 2014, the Azerbaijani kalaghayi was included in the Representative List of UNESCO's Intangible Cultural Heritage under the name "Kelaghayi symbolism and traditional art". Starting from 2005, kalaghayi has been exhibited at various exhibitions in Azerbaijan, Turkey, Georgia, Hungary, Austria, Italy, USA, Belgium, Malaysia and other countries.

"Azerbaijan carpet", the national brand of Azerbaijan, has taken a special place and strengthened in the world market. Today, Azerbaijani carpets that resonate with the world are the result of the long-term historical, cultural, political and economic development of this area. Historically, Azerbaijan's location on the Great Silk Road has been one of the main factors influencing the development of carpet and sericulture here. Today, it is one of the facts that confirm that Azerbaijani carpets, which are found in many famous museums and private galleries of the world, are bought as branded products and are very

valuable. In the "State Program for the Protection and Development of Carpet Art in the Republic of Azerbaijan for 2018-2022", exporting the carpet to the world market as a national brand was one of the main tasks. In the state program, the creation of national brands in the field of carpet weaving and promotion in foreign markets has a special place. The establishment of the brand "Azerbaijan carpet" ("Azerbaijan carpet") and its promotion in foreign markets are very important in terms of preventing the sale of Azerbaijani carpets under the name of other countries' brands. The Ministry of Economy and "Azerkhalcha" Open Joint Stock Company were entrusted with the execution of those works. Currently, our carpets with national patterns exported to the world market are sold under the name "Azerbaijan brand". In order to brand the product, advertising, promotion and marketing should be done properly. For this, "Azerkhalcha" participates in international carpet sales-exhibitions held in different countries of the world and presents carpets as "Azerbaijan brand". In 2016-2018, "Azerkhalcha" products were exhibited at international events held in the USA, Germany, and Russia. "Azerkhalcha" participates in the DOMATEX carpet salesexhibition every year and cooperates with the prestigious "Hali" and "Carpet XL" magazines. Azerbaijani carpets, our national brand, embody the unique characteristics, historical and cultural roots of our nation. At the same time, branding is also economically viable. This factor creates conditions for attracting foreign tourists and foreign investment, stimulating the domestic market, increasing the volume of exports, and strengthening the currency.

Finally, by summarizing the ideas regarding the

development of ecologically clean product production in our country, we can give such a SWOT analysis of this topic.

Table 1

SWOT analysis on the development of environmentally safe product production

S	W	0	T
Strengths	Weaknesses	Opportunities	Theats
<ul> <li>existence of legislative framework</li> <li>implementation of successful strategies, measures and projects in this field</li> </ul>	- poor development of the certification system and failure to conduct it in the correct form - lack of ecologically clean seeds - low use of organic fertilizer - import of GMO products into the country - lack of scientific and practical knowledge	- natural conditions - specialization in production of products in separate areas - nigh number of sunny days - historically formed production culture - informing the population	<ul> <li>pollution of nature</li> <li>insufficient state support</li> <li>failure to meet</li> <li>infrastructure needs</li> <li>global climate changes</li> <li>expansion of the use of chemical pollutants</li> <li>desertification</li> </ul>

Results of the study. In the transition to sustainable development in the changing economy of Azerbaijan, the priorities of the green economy have been defined. These include structural and technological restructuring of the economy, changes in export policy, financing, ecologically balanced macroeconomic measures, implementation of lowemission technologies through efficient and repeated use of resources, and other environmental measures.

Modernization of production and processing areas, support of innovations, application of resource-saving green technologies, increasing investment in the improvement of food and light industries of the country based on the diversification of exports will lead to ensuring the increase in the production volume and range of export-oriented products and the innovative development of those areas.

## References

- 1. Aagerup, U., Frank, A.-S., and Hultqvist, E. (2019). The persuasive effects of emotional green packaging claims. Br. Food J. 121, 3233–3246. https://doi.org/10.1108/BFJ-08-2019-0652
- 2. Aksoy, U., Boz, İ., Eynalov, H. & Guliyev, Y. (2018). Organic Agriculture in Azerbaijan: Current status and potentials for future development. Ankara, FAO. 104. Available at: <a href="http://www.fao.org/3/a-i831e.pdf">http://www.fao.org/3/a-i831e.pdf</a>
- 3. Anar Abbasov (2020). Production and sales markets of organic agricultural products. Agricultural Economy, 2 (32), 53-66. [in Azerbaijani]
- 4. Amanova S., Hajiyeva G. (2023). Investigation of Natural Condition in Urban Landscapes of Plain Areas Based on GIS, C. R. Acad. Bulg. Sci., 76(11), 1679–1689. <a href="https://doi.org/10.7546/CRABS.2023.11.05">https://doi.org/10.7546/CRABS.2023.11.05</a>
- 5. Anderson, E. C., Wormwood, J., Barrett, L. F., and Quigley, K. S. (2019). Vegetarians' and omnivores' affective and physiological responses to images of food. Food Qual. Pref. 71, 96–105. <a href="https://doi.org/10.1016/j.foodqual.2018.06.008">https://doi.org/10.1016/j.foodqual.2018.06.008</a>
- 6. Babayev A.H., Babayev V.A. (2011). Basics of ecological agriculture, Baku, "Law", 383.
- 7. Banovic, M., Reinders, M. J., Claret, A., Guerrero, L., and Krystallis, A. (2019). A cross-cultural perspective on impact of health and nutrition claims, country-of-origin and eco-label on consumer choice of new aquaculture products. Food Res. Int. 123, 36–47. <a href="https://doi.org/10.1016/j.foodres.2019.04.031">https://doi.org/10.1016/j.foodres.2019.04.031</a>
- 8. Barsics, F., Megido, R. C., Brostaux, Y., Barsics, C., Blecker, C., Haubruge, E., et al. (2017). Could new information influence attitudes to foods supplemented with edible insects? Br. Food J. 119, 2027–2039. https://doi.org/10.1108/BFJ-11-2016-0541
- 9. Berger, V. (2019). Social norm-based gamification to promote eco-friendly food choice. J Consum. Mark. 36, 666–676. https://doi.org/10.1017/S1368980017002889
- 10. Cadario, R., and Chandon, P. (2019). Which healthy eating nudges work best? A meta-analysis of field experiments. Mark. Sci. 39, 459–665.
- 11. Cairns, G. (2019). A critical review of evidence on the sociocultural impacts of food marketing and policy implications. Appetite 136, 193–207. <a href="https://doi.org/10.1016/j.appet.2019.02.002">https://doi.org/10.1016/j.appet.2019.02.002</a>
- 12. Carfora, V., Catellani, P., Caso, D., and Conner, M. (2019). How to reduce red and processed meat consumption by daily text messages targeting environment or health benefits. J. Environ. Psychol. 65:101319. <a href="https://doi.org/10.1016/j.jenvp.2019.101319">https://doi.org/10.1016/j.jenvp.2019.101319</a>
- 13. Circus, V. E., and Robison, R. (2019). Exploring perceptions of sustainable proteins and meat attachment. Br. Food J. 121, 533–545. https://doi.org/10.1108/Bfj-01-2018-0025

- 14. Cooremans, K., and Geuens, M. (2019). Same but different: using anthropomorphism in the battle against food waste. J. Public Policy Mark. 38, 232–245. <a href="https://doi.org/10.1177/0743915619827941">https://doi.org/10.1177/0743915619827941</a>
- 15. Fataliyev Hasil (2009). Production of safe food products is the demand of the times. Respublika, 6. [in Azerbaijani].
- 16. Ferrari, L., Cavaliere, A., De Marchi, E., and Banterle, A. (2019). Can nudging improve the environmental impact of food supply chain? A systematic review. Trends Food Sci. Technol. 91, 184–192 <a href="https://doi.org/10.1016/j.tifs.2019.07.004">https://doi.org/10.1016/j.tifs.2019.07.004</a>
- 17. Hajiyeva, A., Hajiyeva, G., Dadashova, K. K. (2023). Landscape-ecological carcass model of urban landscape and methods of optimize urban landscapes (on the patterns of Ganja and Mingachevir cities). Visnyk of V. N. Karazin Kharkiv National University, Series "Geology. Geography. Ecology", (59), 277-283. <a href="https://doi.org/10.26565/2410-7360-2023-59-20">https://doi.org/10.26565/2410-7360-2023-59-20</a>
- 18. Materials of the State Statistics Committee of the Republic of Azerbaijan, Baku, 2016 [in Azerbaijani]
- 19. Materials of the State Statistics Committee of the Republic of Azerbaijan, Baku, 2021 [in Azerbaijani]
- 20. Materials of the State Statistics Committee of the Republic of Azerbaijan, Baku, 2022 [in Azerbaijani]
- 21. Materials of the State Statistics Committee of the Republic of Azerbaijan, Baku, 2023 [in Azerbaijani]
- 22. Report on the status of organic farming and food economy in Azerbaijan, 2022 [in Azerbaijani]
- 23. Tea growing is a traditional field in the southern zone, especially Lankaran. Available at. <a href="https://modern.az/news/142327/">https://modern.az/news/142327/</a> [in Azerbaijani]
- 24. Azərsun Holding. Sun tea factory. Available at: https://azersun.com/en/activity-fields/
- 25. Available at: <a href="https://gilanholding.com/industries/Gabala+Canning+Factory+100?hl=en">https://gilanholding.com/industries/Gabala+Canning+Factory+100?hl=en</a>
- 26. Available at: https://www.vpoxod.ru/page/nature/granat\_info

**Authors Contribution**: All authors have contributed equally to this work **Conflict of Interest**: The authors declare no conflict of interest

## Проблеми оптимізації виробництва та експорту екологічно чистих споживчих товарів в Азербайджані

Iльгар Халілов  $^{I}$  к. геогр. н., доцент,  $^{I}$  Азербайджанський державний економічний університет, Баку, Азербайджан;  $\pmb{\Phi}$ архад Емінов  $^{I}$  к. геогр. н., доцент

У статті обгрунтовано, що забезпечення зеленої економіки на основі екологізації, модернізації, інновацій та нових технологій у виробництві та переробці сільськогосподарської продукції призводить до радикального покращення виробництва, захисту природного капіталу та екосистемних послуг, а також скорочення забруднення та викидів парникових газів. Зазначалося, що регулювання систем сільськогосподарського виробництва в країні вимагає розширення сільськогосподарських практик, які підвищують продуктивність і виробництво, сприяють захисту екосистем, адаптації до зміни клімату, екстремальних погодних явищ, посух, повеней. Метою дослідження  $\epsilon$  сприяння виробництву екологічно чистих і експортно важливих споживчих товарів в Азербайджані та стимулювання їх експорту. Також важливими вважають представлення країни у світі з брендовою продукцією, залучення іноземних інвестицій у цю сферу, підвищення інтересу населення до галузі сільського господарства, залучення в сферу інноваційних технологій. Це визначення шкоди від впливу на аграрний сектор і природу внаслідок деградації зростаючих компонентів навколишнього середовища. Мінімізація втрат на цьому етапі та оптимізація розвитку агропромислового комплексу є одним із головних факторів. Наукова новизна дослідження – це впровадження виробництва та переробки екологічно чистої агропромислової продукції, що не завдає шкоди здоров'ю людини та навколишньому середовищу, регулярний моніторинг екологічного стану ґрунтів, забезпечення збільшення виробництва та асортименту екологічно чистих експортоорієнтованих продуктів харчування та товари легкої промисловості. У статті пояснюється, що розвиток зеленої економіки в Азербайджані є невід'ємною частиною державної політики, і вона займає важливе місце в державному управлінні, на прикладі експортоорієнтованих продуктів харчування та легкої промисловості. Зазначається, що сталість розвитку зеленої економіки виступає критерієм виробництва конкурентоспроможної продукції держави, що позитивно сприяє забезпеченню життєво важливих потреб людей.

**Ключові слова**: зелена економіка, екологічно чиста продукція виробництва та споживання, сільське господарство, виробництво вина та соку, шовк та килим, мінеральні води.

**Внесок авторів:** всі автори зробили рівний внесок у цю роботу **Конфлікт інтересів**: автори повідомляють про відсутність конфлікту інтересів

Надійшла 23 квітня 2024 р. Прийнята 25 травня 2024 р.