ASERS

Journal of Environmental Management and Tourism

Quarterly
Volume XIV
Issue 5(69)
Fall 2023
ISSN 2068 – 7729
Journal DOI
https://doi.org/10.14505/jemt

ASERS Publishing

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Volume XIV
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ASERS Publishing
http://www.aserspublishing.eu
ISSN 2068 – 7729
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Table of Contents:

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Volume XIV, Issue 5(69), Fall 2023

DOI: https://doi.org/10.14505/jemt.v14.5(69).04

Attracting Investment for Rural Development: Introduction of Organic Agriculture and ESG Principles in Kazakhstan

Marzhan KUANDYKOVA
Turan University, Republic of Kazakhstan
ORCID: 0000-0002-5804-7691; Researcher ID: JBS-7544-2023
19201021@turan-edu.kz

Aidos AKPANOV
Turan University, Republic of Kazakhstan
ORCID: 0000-0003-3559-098X; Researcher ID: JBS-6727-2023
a.akpanov@turan-edu.kz

Santay TLEUBAYEVA
Taraz Regional University named after M.Kh. Dulaty, Republic of Kazakhstan
ORCID: 0000-0002-3312-5593; Researcher ID: CAG-0568-2022
akhmetovagulistan24@gmail.com

Anuar BELGIBAYEV
Kazakhstan-Swiss Institute of Tourism and Hotel Business, Republic of Kazakhstan
ORCID: 0000-0003-1844-0445; Researcher ID: CDT-6411-2022
belgibaev.92@mail.ru

Askar MAKHMUDOV
West Kazakhstan Innovation and Technological University, Republic of Kazakhstan
ORCID: 0000-0002-1594-0877; Researcher ID: JBS-7558-2023
amakhmudov@list.ru

Aigul ATCHABAROVA
Kazakh Ablai Khan University of International Relations and World Languages, Republic of Kazakhstan
ORCID: 0000-0001-9207-985X; Researcher ID: JBS-7567-2023
a.atchabarova@mail.ru

Article info: Received 3 May 2023; Received in revised form 4 June 2023; Accepted for publication 31 July 2023; Published 1 September 2023.

Abstract: Today, the market for organic products is one of the most dynamic in the world. The prerequisites for this are the growing consumer demand for food that is environmentally friendly and safe for human health. In Kazakhstan, despite the existing problem, the development of organic production in the agro-food system appears promising and, if implemented in compliance with environmrntal, social and governance (ESG) principles, can be beneficial for the country, which determines the relevance of the study. The purpose of the study is to analyze the possibilities of investment incentives for organic agriculture for the sake of the development of Kazakhstan's rural areas and the implementation of ESG principles. The study employs the following general scientific methods: a) theoretical: analysis of scientific sources; b) empirical: the focused interview method (focus group), an online expert survey; c) mathematical and statistical methods of data analysis; triangulation method. The study concludes that Kazakhstan has considerable potential for the development of organic agriculture. The production of organic products in Kazakhstan is an extremely promising area that can promote the competitiveness of agricultural products, significantly improve the country's image on the world stage, and facilitate the development of market infrastructure and sustainable development of the country as a whole.

Keywords: sustainable development; ESG principles; landscaping; green spaces; green infrastructure.

JEL Classification: Q13; Q16; R58.

Introduction

Rural areas play a vital part in the development of the national economy. However, their development often requires investment programs with the involvement of the state and large businesses. The search for the forms, ways, and methods of organization of production, areas of economic activity, and production alternatives is a priority in developing the competitive strategy of agricultural enterprises to attract investment. Organic agricultural production is one of the most promising alternative methods of production that focuses on economic growth and is safe for the environment (Aher *et al.* 2012, 209). We believe that the implementation of organic agriculture (OA) can become a key to attracting investment and stimulating the growth of agricultural land. In this paper, we emphasize the potential benefits and issues of introducing OA in rural areas proceeding from the experience of Kazakhstan, as well as highlight the ways to attract investments for the development of rural territories.

We believe that there may be several main benefits of organic farming in rural areas.

1.Improved efficiency of agricultural production together with a reduction of anthropogenic pressure on the environment and natural resources can be achieved through the development of organic production as an alternative farming model (Lotter 2003, 59; Salkhozhayeva *et al.* 2022, 131). This leads to higher yields and improved crop quality.

2.Increased biodiversity: organic farming encourages the use of multiple crops, crop rotations, and intercropping systems, resulting in greater biodiversity and a healthier ecosystem.

3.Higher market demand: there is great demand for organic products, and the growth of this market has created many opportunities for rural farmers.

4.Improved development of rural areas: by promoting sustainable agriculture, organic farming can improve the living standards of the population (Polushkina *et al.* 2020, 1081). The social benefits of OA include the creation of additional jobs in rural areas and new prospects for small and medium-sized farms.

However, in the development of the territory through fostering OA, the state and business can face several problems.

Lack of access to markets. One of the biggest problems faced by rural farmers is the lack of access to markets. Therefore, for the successful functioning of the market for organic products, it is important not only to produce quality products but to carry out a set of measures for effective marketing. This complex involves the physical transportation and distribution of goods in the market space, delivering goods to the demands of consumers, and organizing the delivery of goods to the places of their consumption or use. All of this is part of the development of a marketing and sales strategy.

The primary goal of the sales strategy is the realization of the producer's economic interest (entrepreneurial profit) through satisfying the solvent demand of consumers.

In the choice of marketing channels for organic products in Kazakhstan, we can refer to the European experience. The main European marketing channels for organic products are retail (70%), direct sales from businesses and sales through markets, which provide about 15% of sales, and sales through specialized stores, such as bakeries, butchers, restaurants, and other catering facilities – up to 15% (Reganold and Wachter 2016).

Worldwide practice demonstrates that the main marketing channels for organic food sales are direct sales from the producer to the consumer through markets or stores owned by the producer (Pretty and Bharucha 2014, 1571).

Foreign experience in selling organic products in the retail trade suggests that the choice of marketing channels depends on the level of development of this market segment. In the case of newly emerging markets, most sales are made through specialized organic food stores. Later, as the market matures, the share of supermarkets in the total number of outlets grows and reaches 60% (Seufert *et al.* 2012, 229). Domestic organic producers who are interested in finding competent importers and business partners are also encouraged to participate in organic fairs, which display organic food and methods of production.

High initial costs. The transition to organic farming can be costly, and agribusinesses and farmers may need assistance in accessing financing and investment programs. The government can provide subsidies or low-interest loans to help farmers make the transition and offer various financial instruments that could support agribusinesses and farmers (Kashina *et al.* 2022, 2413).

Thus, we emphasize the need to develop and implement a mechanism for investment incentives for organic production by agricultural enterprises, which will consider global trends in the development of this direction of economic activity.

Aside from macro-level changes, the implementation of this mechanism allows for the development of public-private partnerships in OA, as well as for the training of highly qualified personnel, improvement of economic relations, and changes in the fiscal regulation of OA (Soni *et al.* 2022, 21).

Furthermore, this mechanism makes it possible to attract young people to rural areas and provide human capital and investment resources to the economy of specific enterprises; to create prerequisites for investment measures of socio-economic and environmental development, for improvement of the investment climate, ensuring the activation of agribusiness processes, and so on (Jouzi *et al.* 2017, 144).

Realization of the proposed measures in terms of investment incentives for organic production by agricultural enterprises will raise the interest of enterprises in the production of such products (Badgley *et al.* 2007, 86).

Lack of technical knowledge. Organic farming requires specialized knowledge and skills, which many rural farmers may not have access to. To solve this problem, training and information services can be provided to help farmers learn about organic methods and improve their technical skills. In addition, special programs and courses for training specialists and managers in organic farming can be introduced in specialized universities in Kazakhstan.

According to IFOAM (International Federation of Organic Agricultural Movements), the total turnover of organic products in the world has reached 60 billion dollars; the total area of land used for organic production has already reached almost 37 million ha and the total number of employed farmers – 1.8 million (de Ponti *et al.* 2012, 1). The number of countries engaged in organic production is 160, and those who have implemented organic standards – 84 (Migliorini and Wezel, 2017).

From this, we can conclude that the study of the prospects and conditions for the development of organic production to increase the investment attractiveness of rural areas of Kazakhstan is a topical issue for scientific research.

1. Literature Review

Unlike intensive methods of farming (Adilkhankyzy *et al.* 2022, 539), organic production relies on the use of resource-saving technologies (Tatibekova *et al.* 2022, 2002) and minimization of mechanical tillage (Nugmanov *et al.* 2022, 268) and excludes the use of synthetic substances (Gusev *et al.* 2022, 842; Reganold and Wachter 2016). A priority for OA is the use of materials and technologies that improve the ecological balance in natural systems (Seidakhmetova *et al.* 2022, 1993; Zhumatayeva *et al.* 2022, 492) and contribute to the creation of sustainable and balanced agroecological systems (Pretty and Bharucha 2014, 1571; Tsenina *et al.* 2022, 63). Organic production ensures that the organic farming system and agricultural products comply with certain standards, which provides an opportunity to label products accordingly and sell them as organic (Seufert *et al.* 2012, 229).

Analyzing Kazakh and world interpretations of the essence of OA and its components, we must note the lack of unity of scientific views, although there are many common features. Some scientists (Lee *et al.* 2015, 263; Santhoshkumar *et al.* 2017, 1277) believe that in the definition of OA, the emphasis is placed either on the technological aspect of such production (Nasiyev *et al.* 2022, 77) or on the process of its management. Thus, they use the idea of a systemic combination of the most important aspects of these characteristics.

Another group of researchers (Sandhu *et al.* 2010a, 1) argues that OA stands for the practical implementation of the main provisions of the concept of sustainable development.

According to the definition of IFOAM (International Federation of Organic Agricultural Movements), OA is a production system that supports the health of soils, ecosystems, and people. It rules out the use of chemically synthesized fertilizers and plant and animal protection products, the use of GMOs, preservatives, etc. All stages of cultivation, transportation, and processing provide for maximum environmental protection and the protection of workers' health and are subject to mandatory inspection and certification (de Ponti *et al.* 2012, 1).

From the perspective of balanced development the most successful is the interpretation of P. Migliorini and A. Wezel (2017), which presents OA as a holistic multifunctional model of management and production of organic products which provides a balanced dynamic equilibrium between the components of an integrated socio-economic system over a period of time to combine economic growth and higher living standards while improving the environment (Martirosyan *et al.* 2022).

Thus, the core idea is to use self-regulating mechanisms of agroecosystems, resources obtained locally and on the territory of the farm, and the management of biological processes and reactions. The use of external sources of energy, both chemical and organic, is limited as much as possible. Organic farming primarily relies on

the sustainable management of ecosystems rather than the mobilization of external resources (Connor and Mínguez 2012, 106).

The majority of existing studies suggest that the primary most efficient methods of agricultural production in OA include the organic (Crowder *et al.* 2010, 109), organic and biological (Norton *et al.* 2009, 221), biodynamic (Rundlof and Smith 2006, 1121), biological (environmental) (Meier *et al.* 2015, 193), and integrated (Inclan *et al.* 2015, 1102) methods.

Researchers believe that of particular importance in ensuring the development of OA (MacRae *et al.* 2007, 1037; Sandhu *et al.* 2010b, 302) is the introduction of ESG-principles (Environmental, Social, Governance) in the management of agricultural areas: environmental protection (environmental friendliness), creation of favorable social conditions (sociality), fair treatment of employees and customers, and good corporate governance (Khoruzhy *et al.* 2022). These principles are largely consistent with the OA principles established by the IFOAM, which are the principle of ecology (OA should follow the principles of natural ecological systems and cycles, operating within and maintaining them), fairness (OA has to be built on relationships that guarantee fairness with regard to the environment and life opportunities), care (OA management must be proactive and responsible to protect public health and welfare and the environment), and the principle of preserving health (OA must support and improve the condition of the soil (Hieu 2022, 1125), plants, animals (Baimukanov *et al.* 2022, 154), humans, and the planet as a single indivisible whole) (Woodward and Vogtmann 2004, 24).

The goal of the study is to analyze the possibilities of investment incentives for OA for the development of rural areas of Kazakhstan and the implementation of ESG principles.

Research objectives: 1. to analyze scientific literature on the problem of introducing ESG principles in Kazakhstan for the development of OA; 2. to identify the most efficient methods of agricultural production in the context of the implementation of OA in Kazakhstan; 3. to determine the main advantages of implementing ESG principles in the development of OA in Kazakhstan; 4. to analyze the primary directions for improving the efficiency of rural territory management in the development of OA based on ESG principles; 5. to establish problems in the development of OA market in Kazakhstan.

2. Methods

The established research objectives were addressed by means of the following general scientific research methods: a) theoretical: analysis of scientific sources on the research problem; b) empirical: the focused interview (focus group) method, an online expert survey; c) mathematical and statistical data processing methods; the triangulation method, which tested the consistency of the data obtained through the focused interview and the expert survey.

The study was conducted in three stages in August-September of 2022 based on the K. Zhubanov Aktobe Regional University, Toraigyrov University, and L.N. Gumilyov Eurasian National University.

In the first stage of the study, scientific and analytical sources dealing with the research problem were analyzed. The analysis of publications covering the outlined issues gave the opportunity to examine scientific approaches to the implementation of ESG principles for the development of OA and improvement of rural territory management.

The second stage consisted in the expert interview (focus groups). The interview results gave grounds to determine the most efficient methods of agricultural production with the introduction of OA in Kazakhstan, as well as the advantages of implementing ESG principles in this process, which would contribute to the efficiency of rural area management. The interview data were also used to establish problems in the development of the market for OA in the country. The focused interview included nine people, who were employees of enterprises in Kazakhstan's agro-industrial complex who dealt with the implementation of OA development projects. The audio-recorded group discussion lasted 1 hour and 15 minutes.

In the third stage of the study, after the results of the focused interviews were processed, an online expert survey was carried out. The criterion for the selection of experts was at least 5 years of experience in the field of organic farming and animal husbandry. E-mail letters were sent to 48 experts, asking them to rank the most effective methods of agricultural production in OA identified during the focus group and the benefits of implementing ESG principles in the development of OA in Kazakhstan that would contribute to better management of rural areas, as well as problems in the development of OA market in Kazakhstan.

All participants in the study were briefed about the purpose of the study and about the intention of its organizers to publish the results in a summarized form.

The consistency of expert opinions in the expert ranking was assessed using Kendall's concordance coefficient (W), which was calculated using the SPSS software product. The information obtained in the expert ranking was then processed to determine the weights of the expert opinions.

3. Results

The most efficient methods of agricultural production in OA in Kazakhstan determined by the results of the focus group and evaluated by the pool of experts are presented in Table 1.

Table 1. The most efficient methods of agricultural production in OA in Kazakhstan

No.	Method	Characteristic	Rank	Weight
1	Integrated	Combining the advantages of intensive and organic agricultural production, while avoiding their shortcomings through the rational use of natural conditions and achievements of scientific and technological progress	1	0.37
2	Biological (environmental)	Strict restrictions on the use of pesticides and a flexible attitude to mineral fertilizers, only organic and non-toxic preparations (essential oils, powders, infusions of algae, etc.) are allowed	2	0.31
3	Organic	Crops are cultivated without the use of synthetic fertilizers, pesticides, or growth stimulants, *i.e.* with a complete rejection of means of chemicalization; manure, compost, bone meal, and raw rocks (dolomite, glauconite sand, chalk, lime, feldspar) are used as fertilizers; pyrethrum, garlic, and tobacco dust are used for pest control	3	0.21
4	Organic and biological	Creating a living and healthy soil by maintaining and activating its microflora; only organic fertilizers (manure, green manure) and some slow-acting mineral fertilizers (Tomas slag, basalt powder) are used	4	0.11

Note: compiled from the expert survey; the concordance coefficient W = 0.77 ($p < 0.01$), indicating a strong consistency of expert opinions

The advantages of implementation of ESG principles to improve the efficiency of rural management in the development of OA in Kazakhstan, determined by the results of the focus group and evaluated by a pool of experts, are presented in Tables 2-4.

Table 2. Benefits of implementing the ESG principle of eco-friendliness (Environment) in the development of OA in Kazakhstan

No.	Benefits	Rank	Weight
1	Reduction of anthropogenic load on the environment due to agricultural activities	1	0.26
2	Preservation and restoration of agricultural soil fertility, improvement of soil structure	2	0.22
3	Prevention of land degradation and acidity and salinity of soils	3	0.15
4	Preservation of biodiversity, avoidance of monoculture dominance, natural conditions of animal husbandry	4	0.11
5	Reduced risk of erosion due to greater amounts of humus, physical stability, and ability to use water	5	0.09
6	Cleaning of the sources of drinking water from toxic chemicals	6	0.07
7	Harnessing the potential of symbiotic processes	7	0.05
8	Combination of the preservation of wildlife biodiversity and agricultural biodiversity and soil conservation	8	0.03
9	Promotion of a better mix of biotopes adjacent to agricultural land	9	0.02

Note: compiled from the expert survey; the concordance coefficient W = 0.74 ($p < 0.01$), indicating a strong consistency of expert opinions

Table 3. Benefits of implementing the ESG principle of social nature (Social) in the development of OA in Kazakhstan

No.	Benefits	Rank	Weight
1	Improved life expectancy and health of the population	1	0.27
2	Greater well-being of the population owing to the diversification of activities, higher employment rates, and the development of rural areas	2	0.22
3	Increased level of education of the rural population	3	0.17
4	Formation of the environmental image and rating of Kazakhstan	4	0.14
5	Providing the public with high-quality and environmentally friendly and safe certified organic food, as well as other goods	5	0.10
6	Preservation and support of small farms	6	0.05
7	Higher scientific and technological levels of the agricultural sector	7	0.03
8	Ensuring the food security of Kazakhstan	8	0.02

Note: compiled from the expert survey; the concordance coefficient W = 0.755 ($p < 0.01$), indicating a strong consistency of expert opinions

Table 4. Benefits of implementing the ESG principle of good corporate governance (Governance) in the development of OA in Kazakhstan

No.	Benefits	Rank	Weight
1	Introduction of resource-saving technologies and technical means, reduction of the energy intensity of agricultural production	1	0.32
2	Development of local markets for organic products through the establishment of small farms	2	0.23
3	Additional development of the processing sector for the produced organic products	3	0.17
4	Increased crop yield (with long-term application)	4	0.12
5	Higher quality and competitiveness of agricultural products of Kazakhstan on domestic and world markets	5	0.07
6	Significant reduction in production costs and dependence on external financing (with medium and long term application)	6	0.05
7	Greater use of renewable resources	7	0.04

Note: compiled from the expert survey; the concordance coefficient W = 0.81 ($p < 0.01$), indicating a strong consistency of expert opinions

Despite the above-mentioned benefits, the market for organic agricultural products in Kazakhstan remains at an early stage of development. The synthesis of expert opinions points to the following main problems in the development of the organic products market in Kazakhstan (Table 5).

Table 5. Problems of the development of the OA market in Kazakhstan

Group of problems	Problem	Rank	Weight
Institutional	Lack of state financial support	3	0.14
	Imperfect institutional and legal support	11-12	0.01
	Lack of national certification bodies	11-12	0.01
Organizational	Underdeveloped infrastructure of the domestic market for organic products	4	0.10
	Little awareness of the peculiarities of organic production, lack of specialized knowledge and skills	5	0.09
	The beginning stage of development of the system of processing, production, wholesale, and retail of organic products	8	0.04
	Imperfect commodity structure of organic raw materials, the predominance of grains	9-10	0.03

Group of problems	Problem	Rank	Weight
Economic	Lack of access to markets	1	0.24
	High initial costs, requiring significant investment in production	2	0.20
	Increase in the cost of production due to lower yields during the conversion period and in the case of low soil fertility, low natural productivity of animals and seeds	6	0.06
	Certification expenses	9-10	0.03
Social	The presence of a transition period, during which the income of agricultural producers may fall	7	0.05

Note: compiled from the expert survey; the concordance coefficient W = 0.80 ($p < 0.01$), indicating a strong consistency of expert opinions.

4. Discussion

OA can become a powerful tool for attracting investment and stimulating the growth of rural regions. However, there are problems to be addressed. Proper support and resources can make organic forming an effective way to improve the quality of life of rural farmers, increase biodiversity, and contribute to sustainable development. By prioritizing investment in OA in rural territories, the state and organizations can support the growth of rural communities and promote more sustainable development in Kazakhstan's rural regions (Migliorini and Wezel 2017; Sandhu *et al.* 2010a, 1).

Implementation of the social EGS principle provides such advantages as support for the livelihood of the rural population and stimulation of small farms, creation of jobs, preservation of traditional knowledge of farming in each region, and reduced migration of the rural population to megacities. K.S. Lee, Y.C. Choe, and S.H. Park demonstrate (2015) that agricultural production often prompts farmers to cooperate to reduce their certification, transportation, and processing expenses. In this sense, OA enables the self-determination of small farmers and makes them more self-confident. As suggested by D.J. Connor and M.I. Mínguez (2012), OA reduces the health risks of agricultural workers, as they are the most likely to be exposed to pesticides and other chemicals used in conventional production. Organic products are more beneficial to consumers due to the minimized health effects of toxic and persistent chemicals (Meier *et al.* 2015, 193).

Proceeding from the results of our study and previous research (Kashina *et al.* 2022, 2413; Nurgaliyeva *et al.* 2020, 149; Yashkin *et al.* 2022, 181), we propose the following measures to create favorable conditions for the development of the OA market:

- To develop national regulations for organic production based on international requirements and standards;
- To intensify the institutional and infrastructural support of the market for organic agricultural products;
- To resolve the issue of accreditation of authorized organic production certification bodies;
- To introduce special programs and courses to train specialists and managers in OA in specialized universities in Kazakhstan;
- To supplement the state statistical reporting in the agricultural sector with special forms to reflect the position of the production and turnover of organic agricultural products and foodstuffs;
- To develop and enforce the implementation of the program of state support for producers of organic products.

Given the above, it is worth considering the improvement of public policy to stimulate and develop the production of organic agricultural products by creating a system of state investment incentives. As indicated by research findings (Kaldiyarov *et al.* 2021, 56; Nardin and Nardina 2021, 1242), without state support the conduct of organic production is virtually impossible.

The main levers of economic stimulation of the production of organic agricultural products include:

- Direct support (in the form of budget subsidies for products, preferential loans for the period of conversion);
- Indirect support (measures aimed at assisting in passing certification, laboratory research (Temreshev *et al.* 2023, 1), measures to provide information and consulting services, insurance (Garnov *et al.* 2022)).

Concerning state support, for economic entities operating in the sphere of production and circulation of organic products (raw materials), it should be provided in accordance with the program of state support for producers of organic products. In the course of the implementation of this program, it is necessary to form an

investment and innovation model of agricultural development due to increased competition in the market of agricultural products.

The formation of this model should be facilitated by the creation of economic conditions for the development of OA. Among the priority measures are the following:

- Economic incentives for businesses in the production of organic agricultural products through appropriate tax, customs, pricing, and credit policy. Application of special anti-dumping and countervailing protection measures, including import quotas, special duties levied regardless of the import duty, anti-dumping, and countervailing duties;
- Establishing a state order for the production of organic agricultural products;
- Economic regulation of imports of organic food and exports of agricultural raw materials;
- Creating conditions for technical re-equipment of production facilities, including through the reduction of the tax base of enterprises by the amount of their funds allocated for technical re-equipment;
- Establishment of tax incentives for enterprises producing organic agricultural products and investment in the introduction of innovative technologies that support the production of organic products.

In connection with the above, there is a need to stimulate investment activity and ensure the growth of direct investment in fixed capital of enterprises at the expense of budgets of all levels (Panchenko *et al.* 2022, 2385).

One of the features of the production of organic agricultural products is increased costs compared to traditional agricultural production. The enterprise producing organic agricultural products needs additional funds. Scientists have outlined all additional sources of funding:

- own funds of the company to implement projects to switch from conventional to organic production;
- funds from the budgets of all levels to finance the restructuring of large enterprises toward the production of organic products;
- environmental funds that allocate funds for the implementation of projects related to the improvement of the environmental situation;
- bank loans in the aspect of preferential loans to enterprises producing organic products;
- non-repayable grants – allocation of funds for organic production projects.

Although today's Kazakhstan has no proven incentive mechanisms for producers of environmentally safe products, the country is still beginning to form a new market segment – the market for organic agricultural products. However, the product supply in this sector in the short term will be much smaller than in Western countries, and organic products themselves will be only a small niche in the grocery market.

This way, a consistent state policy for the development of organic agricultural production provides for the formation of a legislative framework, budget priorities, the implementation of several regulatory measures, and, accordingly, the organization of a regulated market for organic food. For the creation of this market, the necessary prerequisites must be created, including regulatory support, the formation of market structures and the appropriate economic mechanisms, and state support for the producers of organic agricultural products. The effectiveness of state support can be achieved only if the first two positions are realized and special state and regional programs on this issue are developed.

Conclusion

It can be argued that OA is a method of intensive agriculture, which is based on the effective use of the entire complex of local conditions and resources. This form of farming can be exceptionally favorable for sustainable socio-economic and ecological development since it is characterized by high economic efficiency. The market for OA products is very promising but underdeveloped, so it opens up broad prospects for producers and exporters. Production of organic products in Kazakhstan is an extremely perspective direction, which can increase the level of competitiveness of agricultural products, significantly improve the country's image on the world stage, and contribute to the development of market infrastructure and sustainable development of the country as a whole.

Kazakhstan has considerable potential for the development of OA and has already achieved certain results in the production of its organic agricultural products, their export, and consumption in the domestic market. Given the above, it is necessary to further study the status and trends of development of the consumer market for organic products in Kazakhstan and beyond. This can be a determining factor in the effective operation of national food enterprises in the current market conditions and will allow forming possible ways of promotion and sales of these products in the national agro-food market.

Acknowledgments

No funds, grants, or other support was received.

Credit Authorship Contribution Statement

Marzhan Kuandykova: Investigation, Formal analysis, Writing – original draft, Validation.
Aidos Akpanov: Conceptualization, Methodology, Project administration, Supervision, Data curation, Validation, Writing – review and editing.
Anuar Belgibayev: Investigation, Formal analysis, Writing – original draft.
Santay Tleubayeva: Writing – review and editing, Project administration, Validation.
Askar Makhmudov: Writing – review and editing, Data curation, Validation.
Aigul Atchabarova: Writing – review and editing, Data curation, Validation.

Declaration of Competing Interest

The authors have no conflicts of interest to declare that are relevant to the content of this article.

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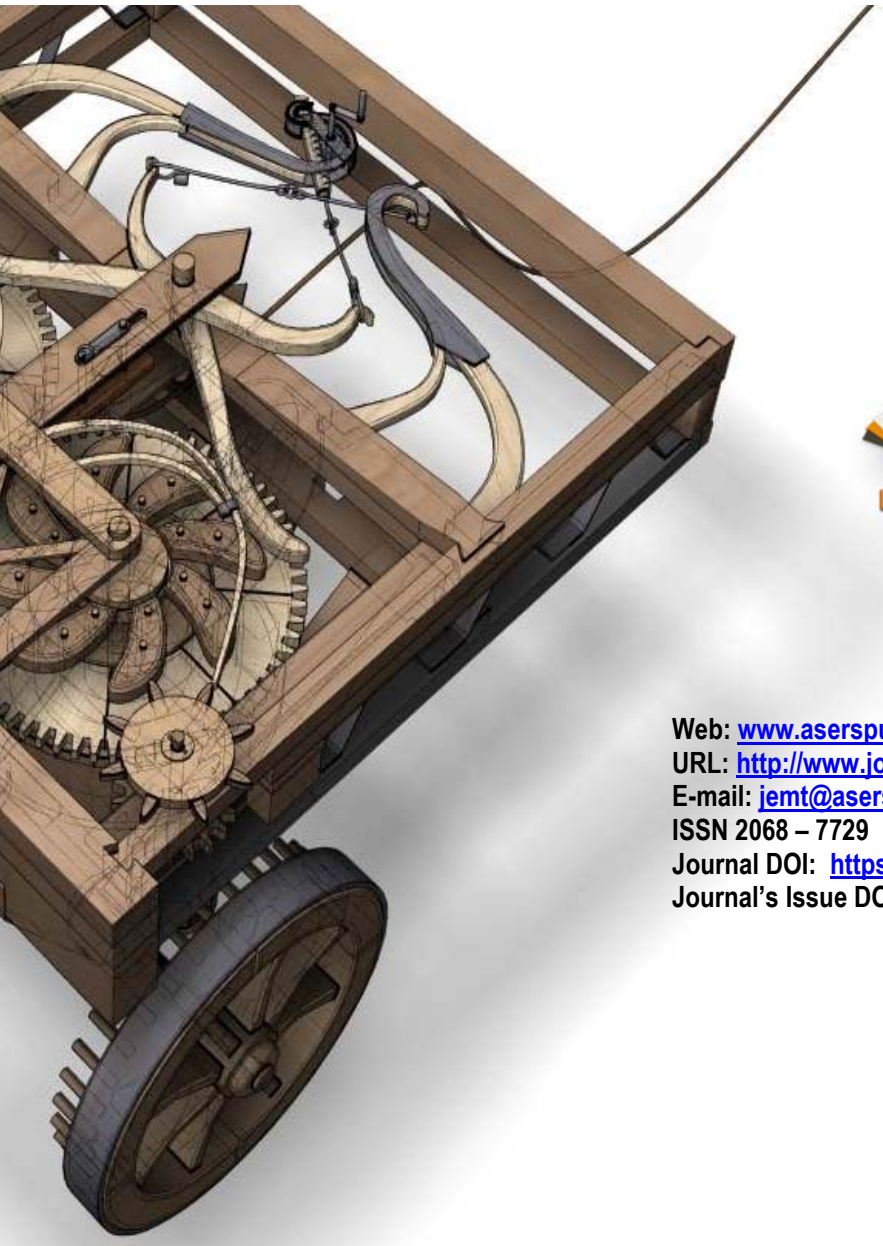

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Journal DOI: https://doi.org/10.14505/jemt
Journal's Issue DOI: https://doi.org/10.14505/jemt.v14.5(69).00