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"GREEN" ECONOMY: REALITIES AND PROSPECTS IN AGRICULTURE

# "ЖАСЫЛ" ЭКОНОМИКА: АУЫЛ ШАРУАШЫЛЫҒЫНДАҒЫ ШЫНДЫҚТАР МЕН ПЕРСПЕКТИВАЛАР

«ЗЕЛЕНАЯ» ЭКОНОМИКА: РЕАЛИИ И ПЕРСПЕКТИВЫ В СЕЛЬСКОМ ХОЗЯЙСТВЕ

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Abstract. The goal-is to focus on the importance of developing a "green" economy for the agroindustrial complex, modern approaches to its impact on economic stability in Kazakhstan and improving the environment. Methods - comparative analysis, assessment and synthesis, systematic approach. Results - the problems and prospects of environmental safety in the republic, the advantages of a resource-saving model of sustainable growth, a program for the development of a green" economy in the countryare shown. A significant degree of lagging in the use of innovative technologies for an early transition to eco-innovation has been revealed. The measures necessary for their inclusion in the national environmental policy as a key factor are proposed. The relevance of the study is determined by the positive impact of organic agriculture on improving the level and quality of life of rural residents. It is noted that in recent years, the annual production of environmentally friendly products has increased by an average of 20-30%. Ecosystems consider animals, feed and fertilizers as a single target system. The Republic of Kazakhstan has large areas of natural pastures for raising livestock and obtaining high-quality livestock products. The practical results of the expediency of large-scale application of the principles of biodiversity conservation and alternative energy sources to increase the efficiency of agro-industrial production, completeness of meeting the needs of the population of remote regions for high-quality food products, and improving the environment are generalized. Conclusions - at present, indicators of environmental sustainability all over the world are decreasing. For maintaining sustainable natural potential and biological resourcesit is needed to use targeted strategy and investment decisions at all levels, from local to global, and effective- innovative financing mechanisms are required to stimulate the required scale of investment.

Аңдатпа. *Мақсаты –* агроөнеркәсіптік кешен үшін "жасыл" экономиканы дамытудың, оның Қазақстандағы экономикалық тұрақтылыққа және қоршаған ортаның жай-күйін жақсартуға ықпалына қазіргі заманғы тәсілдердің маңыздылығына назар аудару. *Әдістері* салыстырмалы талдау, бағалау және синтез, жүйелік тәсіл. *Нәтижелері -* республикадағы экологиялық қауіпсіздіктің проблемалары мен перспективалары, орнықты өсүдің ресурс моделінің, елдегі "жасыл" экономиканы дамыту бағдарламасының артықшылықтары көрсетілген. Эко-инновацияларға жедел көшу үшін инновациялық технологияларды пайдалануда артта қалудың елеулі деңгейі анықталған. Оларды негізгі фактор ретінде экология жөніндегі ұлттық саясатқа енгізу үшін қажетті шаралар ұсынылған. Зерттеудің өзектілігі ауыл тұрғындарының өмір сүру деңгейі мен сапасын жақсартуға органикалық ауыл шаруашылығының оң әсерімен анықталады. Соңғы уақытта экологиялық таза өнім өндірісінің жыл сайынғы көлемі орта есеппен 20-30%-ға артуда. Экожүйелер жануарларды, жем мен тыңайтқыштарды біртұтас мақсатты жүйе ретінде қарастырады. Қазақстан Республикасында мал өсіруге және сапалы мал шаруашылығы өнімдерін алуға арналған табиғи жайылымдардың үлкен алаңдары бар. Агроөнеркәсіптік өндіріс тиімділігін арттыру, шалғай өңірлер халқының жоғары сапалы азық-түлік тауарларына қажеттіліктерін коршаған қанағаттандырудың толықтығы, ортанын жай-күйін жаксарту биоалуантүрлілікті сақтау қағидаттарын және баламалы энергия көздерін ауқымды қолданудың орындылығы болып табылатын практикалық нәтижелер қорытындыланды. *Қортындылар –* қазіргі уақытта бүкіл әлемде экологиялық тұрақтылық көрсеткіштері төмендеуде. Табиғи әлеует пен биологиялық ресурстарды қолдау үшін жергілікті деңгейден жаһандық деңгейге дейінгі барлық деңгейлерде мақсатты стратегия мен инвестициялық шешімдерді іске асыру қажет. Инвестициялардың қажетті ауқымын ынталандыру мақсатында қаржыландырудың тиімді инновациялық тетіктері талап етіледі.

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Аннотация. *Цель* – акцентировать внимание на важность развития «зеленой» экономики для агропромышленного комплекса, современных подходов к ее влиянию на экономическую стабильность в Казахстане и улучшение состояния окружающей среды. *Методы* – сравни-тельного анализа, оценки и синтеза, системного подхода. Результаты – показаны проблемы и перспективы экологической безопасности в республике, преимущества ресурсосберегающей модели устойчивого роста, программы развития «зеленой» экономики в стране. Выявлена значительная степень отставания в использовании инновационных технологий для скорейшего перехода к эко-инновациям. Предложены меры, необходимые для включения их в национальную политику по экологии как ключевого фактора. Актуальность исследования определяется позитивным влиянием органического сельского хозяйства на повышение уровня и качества жизни жителей села. Отмечается, что в последнее время ежегодные объемы производства экологически чистой продукции увеличиваются в среднем на 20-30%. Экосистемы рассматривают животных, корма и удобрения как единую целевую систему. В Республике Казахстан имеются большие площади естественных пастбищ для выращивания скота и получения качественных животноводческих продуктов. Обобщены практические результаты, заключающиеся в целесообразности масштабного применения принципов сохранения биоразнообразия и альтернативных источников энергии для роста эффективности агропромышленного производства, полноты удовлетворения потребностей населения удаленных регионов в продовольственных товарах высокого качества, улучшения состояния окружающей среды. *Выводы* – в настоящее время показатели экологической устойчивости во всем мире снижаются. Для поддержания природного потенциала и биологических ресурсов следует реализовать целенаправленную стратегию и инвестиционные решения на всех уровнях – от местного до глобального. В целях стимулирования необходимых масштабов инвестиций требуются эффективные инновационные механизмы финансирования.

Key words: agro-industrial complex, "green" economy, sustainable growth, innovations, natural resources, resource-saving technologies, environmentally friendly livestock products, competitiveness.

Түйінді сөздер: агроөнеркәсіптік кешен," жасыл " экономика, тұрақты өсу, инновациялар, табиғи ресурстар, ресурс үнемдейтін технологиялар, экологиялық таза мал шаруашылығы өнімдері, бәсекеге қабілеттілік.

Ключевые слова: агропромышленный комплекс, «зеленая» экономика, устойчивый рост, инновации, природные ресурсы, ресурсосберегающие технологии, экологически чистая животноводческая продукция, конкурентоспособность.

**Introduction.** In order to preserve the natural potential, ecosystem and biological resources, it is necessary to actively develop a "green" economy. The relevance lies in the changing paradigm of sustainable growth of national socio-economic systems, which justifies the importance of integrating economic and environmental approaches, considering the development of a "green" economy. The main causes of the global financial, environmental and energy crises are associated with the intensive use of natural resources. Today, indicators of environmental sustainability are declining all over the world. Over the past 50 years, according to a report by the World-Wide Fund for Nature (WWF), the living planet index has decreased by 30%. The influence of humanity on the ecological potential, on the contrary, has doubled. In this regard, according to forecast data, by 2030 there may not be enough resources to maintain the required standard of living of the population. In this regard, the development of a "green" economy is important, timely and relevant.

The purpose of the article is, based on the formation of stages in the development of a "green" economy, to study the advantages of the trajectory of its provision and the prospects for transforming the economy of the republic. For a more in-depth approach to understanding the "green" economy, it is necessary to consider a number of problems:

- content of the "green" economy and evaluate the role, significance and its effectiveness:
- international experience of transit to a "green" economy and opportunities for sustainable growth;
- condition, stages of implementation, transition to a "green" economy and prospects of Kazakhstan.

Material and methods of research. "Green" economy in the works of environment-tal scientists: G. Bruntland, M. Kenet, D. Medous, P. Hocken, R. Brown, etc. [1,2] made it possible to trace the evolution of approaches to the "green" economy by generating individual methods. These approaches are deepened in the theories of foreign scientists: W. Jevons, L. Valrass, T. Veblen and A. Saleh.

Today, around the "green" economy in the scientific environment (Steiner A., Iris R., Bess S., Zomonova E.M.) [3], a wide discussion is unfolding, which requires a conceptual justification of the definition of effective methods to ensure sustainable growth in order to preserve and develop the future.

In the literature, numerous program documents of international organizations [4,5,6], at various international conferences and sympo-

sia [7], the need for a transition in various fields of human activity from the traditional so-called "gray" technologies of natural resource management, rigidly focused only on momentary economic feasibility, for non-traditional (nature conservation, nature-like, nature-based, "green" [8] technologies).

The study used systemic and evolutionary approaches, theories of sustainable growth, as well as methods of analysis and synthesis, grouping and comparison.

The information base of the research is documentary and electronic sources of scientific information. The selection of literary sources was carried out using an information request for keywords. The main criteria for choosing information sources are the authoritativeness of the publication, relevance, completeness and reliability of the information provided.

Results and their discussion. The priority area of the "green" economy at the moment is to improve the living standards of the population and its sustainable development. The concept of "sustainable development" includes the minimization of environmental risks with the economic and social growth of the welfare of the state.

One of the most important areas of the "green" economy is sustainable agricultural and rural development (SARD), at the same time, high-level industries are developing, producing food products that are harmless to human health, where a balance of renewable and non-renewable resources is maintained. It is also important that ecosystems, even if damage is done, then the most minimal [9]. An increase in the growth of product production is important in this direction.

The development of a "green" economy should be determined both at the state level, considering a regional approach, and at the international level. State Programs, the Strategy for Sustainable Development of the Republic of Kazakhstan are constantly being developed and are operating in Kazakhstan. The "Green" Economy Transit Program of the Republic of Kazakhstan, adopted in 2013, has become an important state document and includes 3 stages of "green" economy implementation:

- 2013-2020 the formation of "green" infrastructure in Kazakhstan (rational use of resources, increasing the efficiency of environmental protection activities);
- 2020-2030 energy conservation and innovation (introduction of alternative energy sources and respect for natural resources);

• 2050 - "green" economy of the Republic of Kazakhstan (introduction of digital technologies and restoration of natural potential) [10].

At the moment, the country is in the second stage of introducing a "green" economy. Agriculture and forestry for its further development, to support and expand the biological fund, along with the cultivation of monocultures on relatively large areas, requires support from the state in the form of special lending for "green" projects. The "green" economy policy treats animals, feed and fertilizers as a single purposeful system. When everything is balanced, that is, for example, speaking about balanced animal husbandry, on average one hectare of forage crops is provided for one head of cattle. In other words, there is a balance of feed and fertilizer, and the animals themselves are in the fresh air. For example, Scottish farmers celebrate their "green" technologies by hanging free -range eggs (which means buy eggs from hens kept in the field) [lk.9].

Recently, the annual production of organic agriculture has been increasing by an average of 20-30 percent. It differs in that mineral fertilizers are not used in full force here (in most cases, 50% of nitrogen is wasted on cultivated plants, and the rest of it simply pollutes the nature) and pesticides-herbicides [lk 9].

Organic farming has its advantages and minutes, as in organic farming, low productivity is often observed, while it is smoothed out by the high price of these products. A correct crop rotation system is required with the use of organic and mineral fertilizers, while the latter must be of a natural type. Organic farming is characterized by an increase in the employment of the population in agriculture.

The "green" economy is based on a scientific, systematic approach, in accordance with which intensive technologies are developed based on hydrotechnical reclamation, agroforestry, crop rotation, biological methods of pest control, precision seeding technology and various methods of minimizing soil cultivation.

The basis of a "green" economy in agriculture and forestry is a scientific, systematic approach, when it is important to use advanced technologies in hydrotechnical reclamation, agroforestry, crop rotation, precision sowing technologies, all kinds of methods for reducing soil cultivation, biochemical methods of pest control, etc.

So, the use of organic fertilizers instead of mineral fertilizers leads to increased risks to human health, since vegetables become more a source of salmonellosis.

The republic has a high proportion of the rural population - more than 43%. Therefore,

alternative energy sources are necessary for the development of agricultural regions of the country. In Kazakhstan, laws in the field of renewable energy have been developed and measures have been taken to provide support: access to the electricity system, benefits and preferences. Kazakhstan is the only country in Central Asia with the ability to generate solar and wind energy for the development of renewable energy [11]. By the beginning of 2020, the number of power plants based on renewable energy sources in the republic increased to 55, and the capacity increased by almost 18% compared to 2019, which happened with the commissioning of new hydroelectric power plants and wind farms.

The processes of transition to a "green" economy are undergoing various kinds of problems. The livestock sector remains problematic, despite government measures to support it. The main reasons hindering the development of the industry are the problems of feed production. The Republic of Kazakhstan has all the conditions for the development of agriculture and agro-industry in general. For this, the country has favorable natural and climatic conditions, large territories, however, there is not enough area for cattle grazing.

As you know, Kazakhstan has huge natural pasture lands of more than 180 million hectares of pastures (of which 58 million hectares are used) [12], these resources allow increasing the number of beef cattle up to 12 million conventional heads.

It would seem that the country has large areas of natural pastures where it is possible to raise competitive livestock and produce environmentally friendly livestock products. But the whole problem lies in the fact that more than half of the area has no reservoirs, and, therefore, there is no possibility of grazing. As a rule, there can be no talk of year-round grazing, grazing is carried out in the spring-summer period. From autumn to spring, feed is needed to keep livestock. At the same time, there is an insufficient number of sown areas for growing fodder crops, this is due to the diversification of sown areas in favor of oilseeds and fodder crops. It should be noted and the low quality of feed due to violations in the technology of their preparation, procurement, storage [13].

Another problem is the small number of highly productive livestock, the lack of high technologies and equipment for processing livestock products, and poor living conditions.

The livestock sector is waste-free, therefore, it requires fundamentally new approaches to the problem of integrated rational use of all types of livestock products, this concerns the processing of secondary raw materials, contributing to the development of new directions in the production of raw materials and finished products (the possibility of introducing resource-saving technologies for processing bones at meat processing enterprises, using horns, hooves, wool as a source of resources for the production of high-protein animal feed, alternative methods of industrial processing of blood) [14].

Another problem in the development of a "green" economy is the competitiveness of domestic grain crops. Improving the quality of breeding and genetic innovations, through the use of the latest and innovative technologies (resource-saving technologies) will keep the world markets in the future.

At the same time, Kazakhstani agriculture needs to update the material and technical base: it is necessary to use and increase the number of multi-operational agricultural machinery and equipment. The agro-industrial complex requires the differentiation of agricultural technologies in accordance with the specifics of agricultural zones and territories, the use of biotechnologies for plant and soil protection. It is necessary to develop storage and transportation infrastructure (logistics and packaging). There remains the problem of a low level of attracting investments and qualified personnel and compulsory insurance in crop production.

Among the important obstacles hindering the introduction of innovations in the fruit and vegetable sector are the following: biotechnologies for growing and breeding fruit and vegetable crops are not sufficiently developed, and the degree of logistics processes is also limited, which include the formation and development of trade and logistics centers, centers for the deployment and redistribution of wholesale products. Often, many agricultural works are carried out in the old-fashioned way, it is important to improve the qualifications of agrarians and farmers, to study new technologies, industry features, biotechnological processes, the positive experience of other agricultural formations, as well as foreign experience [15]. Deliberate price cuts and competition from neighboring and distant foreign countries also have a negative impact on the development of vegetable growing.

#### Conclusion

1. The importance of a "green" economy is constantly increasing, despite the dampening effect of the effects of the crisis. Kazakhstan has all the conditions and unique opportunities for the wide development of a "green" economy. The large-scale introduction of renewable

and alternative energy sources will effectively contribute to the innovative development of the national economy and sustainable growth of the country, improve the quality of life of the population and preserve nature.

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- 2. By introducing a "green" economy in Kazakhstan, it is important to increase the efficiency of economic development, while reducing water consumption, thereby improving the level of material well-being of the population.
- 3.The "Green" Economy Initiative is based on government coordination of investment injections, which will lead to sustainable growth of the republic. The volume of investments for the implementation of the "green" economy will amount to US \$ 4 billion annually, or about 2% of the total GDP.
- 4. The unique geographical location and the presence of different climatic zones create favorable conditions for the comprehensive development of grain crops in Kazakhstan. With the growth of the world's population, as well as the general increase in global demand for non-GMO food, promising niches are created for environmentally friendly products of the agroindustrial sector of Kazakhstan.

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