

PROBLEMS AND PERSPECTIVES OF ENVIRONMENTAL INNOVATIONS IMPLEMENTATION IN AN AGRICULTURAL ENTERPRISE

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Introduction. Ensuring sustainable development of the country involves focusing on three components: economic, social and environmental. Accordingly, the country's governments are developing policies to support the sustainable development of both region and enterprise. Of course, agribusiness does not stand aside from this process. Agricultural producers first of all should understand the importance of their activities for the development and stability of our country. They create food security, provide jobs, reduce the level of unemployment, pay taxes to the budget, ensure the satisfaction of agricultural products demand among consumers in our country, as well as in other countries. The problem of implementing ecological innovations is always relevant, and for agribusiness as well. Environmental innovations allow the company to reduce costs, introduce modern technologies to reduce the level of pollution, rational use of resources, and ensure the production of environmentally friendly and organic products.

Review of recent sources and publications. The issue of environmental friendliness of production, development and implementation of innovations are in the field of domestic and foreign scientists research, such as: K. Rennings, T. Zwick, L. Horbach [1], O. Savchuk, N. Yavorska [2], I. Skorokhod [3], N. Rebrina, N. Andreeva. However, the globalization processes of greening, orientation of society and governments of developed countries to solving environmental issues actualize the study of problematic aspects and prospects for the introduction of eco-innovations at agricultural enterprises.

The purpose of the article is to study the problems and determine the prospects for the implementation of ecological innovations at agricultural enterprises.

Main material and results of the study. The introduction of eco-innovations has some features compared to other innovations. First, environmental innovations are innovations that reduce the impact on the environment. Secondly, environmental innovations go beyond traditional organizational boundaries of innovations within the enterprise, allow to involve wider social mechanisms that cause changes in existing structures. Thirdly, they relate to innovations in changing the composition of products, namely the production of products from environmentally friendly materials or secondary raw materials. In the field of management, such innovations can be waste management, introduction of new energy saving methods, etc. [1].

Usually, eco-innovations refer to any new product or process that has a certain consumer and economic value, and at the same time significantly reduces the negative impact on the environment compared to existing alternatives [4].

Having chosen the European path of development, enterprises should adhere to the principles and guidelines of European countries regarding the greening of agricultural enterprises, namely [2]:

- sustainable development, which equally takes into account economic, social and environmental components;
- the priority of the biosphere functions in the direct use of its resources;

- avoidance of negative impacts on the environment as a result of economic activity, taking into account remote impacts on the environment;
- rejection of projects related to intervention in natural systems, if their impact on the environment is unpredictable;
- paid nature management and compensation for damage caused by violation of legislation.

With the great growth of global environmental problems, there is a growing interest in environmental innovations that can be implemented in enterprises. Such innovations can not only ensure social and environmental responsibility in business life, but also provide enterprises with competitive advantages. Consumer culture and the principles of sustainable development form new approaches to the functioning of the agricultural sector of the economy, adapt technologies and their technical support, produce a conscious strategic vision of sustainable development by top management [9].

Over time, eco-innovations become business approaches that ensure sustainable development, increase the efficiency and competitiveness of the enterprise [3]. In this context, the main factors that encourage agribusiness to implement environmental innovations are:

- an opportunity to reduce costs for the agricultural products production;
- reduce the risks of territory pollution;
- increase productivity and product quality;
- maximizing efficiency, i.e. achieving environmental goals at minimum costs;
- reduce the cost of agricultural products;
- use all natural resources rationally;
- satisfy the demand for ecologically clean products.

The application of eco-innovations in the agricultural sector will make it possible to better use primary natural resources, will certainly improve the ecological situation in rural regions, will contribute to the formation of sustainable network structures for the support and promotion of the best practices in the field of eco-efficiency, preservation and creation of new jobs, increase quality of the population life.

It is also possible to highlight five more incentives for the introduction of eco-innovations in agribusiness [6]:

- formation of a positive image of agribusiness;
- growing consumer interest in environmentally friendly products;
- access to new sales markets;
- cost reduction;
- rationalization of the manufacturer.

The process of developing and implementing eco-innovations is quite complex, as there are a number of obstacles that prevent it, in particular [7]:

- economic barriers (market prices that do not fully reflect the costs of producing a product or service, for example, the difficulty of transitioning from traditional technologies to ecological ones);
- lack of a legal framework for regulating eco-innovation relations;
- low demand of the public sector and consumers for eco-innovation;
- high cost of ecological products;
- insufficient development of tools for assessing risks and profitability from the introduction of eco-innovations;
- high costs of eco-technological research;
- lack of methods that allow for a comprehensive analysis of the ratio of costs and benefits from the development and implementation of eco-innovations;
- insufficient flexibility of capital investments due to low profitability;
- ineffectiveness of investments in the process of changes in companies that have been operating on the market for many years [8];
- non-compliance of the technology with the given economic requirements and norms of technological design;
- lack of intermediaries who can perform the functions of marketing support and promotion of organic products;
- uncertainty regarding environmental regulation issues in the future;
- lack of enterprise management experience in the field of resource conservation, ecology and natural resources;
- reluctance of management to make changes in production and management processes due to lack of experience in implementing such changes [9];
- lack of highly qualified personnel in the field of management, control and implementation of eco-innovations;
- reluctance of companies to invest in personnel training;

– high requirements for monitoring the implementation of eco-innovations.

In addition, the lack of measures to stimulate the innovative greening of production, the underdeveloped market for ecological innovations, and the lack of sufficient financial resources for changing technical and technological processes slow down the implementation of ecological innovations at agricultural enterprises, which can only be solved with the cooperation of all participants of this process (Table 1) [5].

Table 1

Factors stimulating the introduction of eco-innovative technologies at agricultural enterprises

Impact factor	Directions for eliminating the negative effects of factors	Performers
1. Imperfection of normative and legal regulation	1. Adoption of the appropriate legal framework for organic agricultural production. 2. Adoption of the state program for promoting the implementation of eco-innovative developments. 3. Improvement of the legislative framework regarding innovative activities.	State institutions and authorities.
2. High cost of innovative developments	1. Provision of tax benefits to producers who implement eco-innovations. 2. Use of credit funds. 3. Drawing up a leasing contract (rent). 4. Establishing cooperation between developers of innovative products and producers of organic products.	1. State institutions and authorities. 2. Subjects of the financial market (banks, leasing and insurance companies, venture funds, etc.). 3. Scientific, research and development institutions. 4. Manufacturers of agricultural machinery. 5. Producers of organic products.
3. Inaccessibility to manufacturers due to a limited number of innovative developments	Establishment of scientific and industrial cooperation between developers of innovative products and producers of organic agricultural products.	1. Scientific, research and development institutions. 2. Manufacturers of agricultural machinery. 3. Producers of organic agricultural products.
4. Lack of funding	1. Use of the most necessary innovative developments in production. 2. Establishment of scientific and industrial cooperation with developers of innovative products. 3. Participation in international grants. 4. Attraction of domestic and foreign investments.	1. Producers of organic products. 2. Scientific, research and development institutions. 3. Manufacturers of agricultural machinery. 4. International funds. 5. Domestic and foreign investors.
5. Lack of information about innovative developments	Presentation of innovative developments at exhibitions, fairs, etc.	Scientific, research and development institutions.
6. Lack management of interest in implementing eco-innovations	1. Promotion campaigns among producers of organic agricultural products. 2. Establishment of scientific and industrial cooperation between developers of innovative products and producers of organic agricultural products.	1. Universities. 2. Manufacturers of agricultural machinery. 3. Producers of organic agricultural products.

All of the above problems of development and implementation of environmental innovations are interrelated, and therefore require an integrated approach to their solution. Therefore, in order to activate the processes of greening in agribusiness, it is necessary to create and ensure a number of economic conditions:

- development of the insurance market regarding insurance of the agro-enterprises activities in case of losses from the development and implementation of eco-innovations;
- subsidizing agricultural enterprises;
- development of the unconventional energy sources market;
- formation of environmentally oriented clusters;
- increasing the investment attractiveness of investing resources in the economization of production;
- production, which includes producers of ecological raw materials, final products, energy- and resource-saving, environmentally safe technologies;
- creation of target funds for agribusiness that develops and implements ecological innovations [6; 8].

These proposals will ensure the sustainable development of enterprises, solve the problem of promoting the implementation of ecological innovations at enterprises, create conditions for the availability of investment funds for ecological innovations, and increase the economic interest of enterprises in their implementation.

Implementation of the above directions regarding the use of innovative developments in agribusiness will contribute (Figure 1):

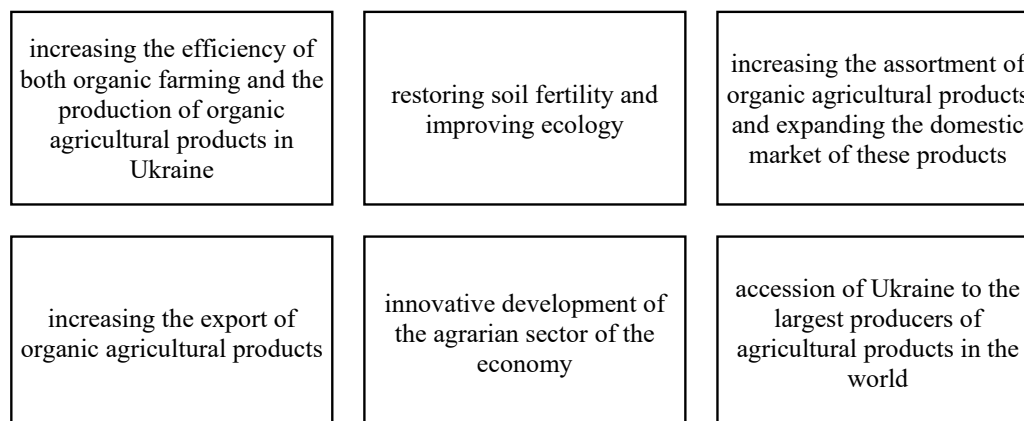


Figure 1. Benefits from the implementation of innovative developments by agribusiness

It is important to note that ecological innovations, like any innovations, require a systemic approach to their management, which should consist in the complexity, unity of organizational, economic and environmental regulation of the processes of creation and dissemination of innovations at all levels [3].

Eco-innovations are aimed at developing the ability of agribusiness to find new ways and technologies to reduce pollution and its consequences, which can significantly reduce the costs of environmental policy in the future.

Experience shows that the introduction of environmental innovations plays a positive role in the formation of an active environmental policy at enterprises. The effect of the environmental innovations introduction can be both economic, associated with an increase in production profitability, and ecological, associated with a decrease in the negative impact of the enterprise on the natural environment. There are various motivational factors for the implementation of environmental innovations at agribusinesses, of course, the main motivators are support from the state, society and provision of targeted funding for agribusiness.

Conclusions. Environmental innovations are aimed at solving various problems, in particular, the rational use of natural resources, pollution control, production of ecological products, cost reduction to eliminate the negative impact on the environment, ensuring food security of the country, thereby contributing to the sustainable development of the enterprise in the long term. The result of the introduction of eco-innovations will be positive not only for agribusiness but also directly for consumers, society, and the state as a whole.

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Problems and perspectives of environmental innovations implementation in an agricultural enterprise.

The article revealed that the implementation of eco-innovations has certain features, in particular, firstly, ecological innovations allow reducing the impact on the environment; secondly, environmental innovations go beyond the traditional organizational boundaries of innovation within the enterprise and allow to involve wider social mechanisms that cause changes in existing structures; thirdly, they relate to innovations in changing the composition of products, namely the production of products from environmentally friendly materials or secondary raw materials. It has been proven that enterprises that have chosen the European path of development must adhere to the principles and guidelines of European countries regarding the greening of agricultural enterprises, namely: sustainable development, which equally takes into account economic, social and ecological components; avoidance of negative impacts on the environment as a result of economic activity, taking into account remote impacts on the environment; rejection of projects that involve intervention in natural systems, if their impact on the environment is unpredictable. The authors determined that the main factors that motivate agribusiness to implement ecological innovations are the opportunity to reduce costs for the agricultural products production, risks of territory pollution, increase productivity and product quality, maximize efficiency, i.e. achieve environmental goals at minimum costs, reduce the cost of agricultural products, rational use natural resources, meeting the demand for ecologically clean products. It was found that enterprises that implement ecological innovations ensure sustainable development of the enterprise in the long term. And the result of the introduction of eco-innovations will be positive not only for the enterprise, but also directly for consumers, society and the state as a whole.

Key words: management, sustainable development, ecological innovations, agribusiness, eco-innovative technologies.

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Чайкіна Аліна Олександрівна, кандидат економічних наук, доцент. **Мусієнко Юлія Сергіївна**, магістрантка, Національний університет «Полтавська політехніка імені Юрія Кондратюка». **Проблеми та перспективи впровадження екологічних інновацій на аграрному підприємстві.**

Виявлено у статті, що впровадження еко-інновацій має певні особливості, зокрема, по-перше, екологічні інновації дозволяють зменшити вплив на навколишнє середовище; по-друге, екологічні інновації виходять за межі традиційних організаційних меж інновацій всередині підприємства та дозволяють залучати ширші соціальні механізми, які викликають зміни в існуючих структурах; по-третє, стосуються інновацій у зміні складу продукції, а саме виготовлення продукції з екологічно чистих матеріалів або вторинної сировини. Доведено, що підприємства, які обрали європейський шлях розвитку мають дотримуватись принципів та орієнтирів європейських країн щодо екологізації аграрних підприємств, а саме: сталого розвитку, який однаково враховує економічні, соціальні та екологічні компоненти; уникнення негативних впливів на навколишнє середовище внаслідок господарської діяльності з урахуванням віддалених впливів на навколишнє середовище; відмова від проектів, які пов'язані із втручанням у природні системи, якщо їх вплив на довкілля є непередбачуваним. Авторами визначено, що основними факторами, які спонукають агробізнес до впровадження екологічних інновацій є можливість зменшити витрати на виробництво сільськогосподарської продукції, ризиків забруднення території, підвищення урожайності та якості продукції, максимізація ефективності, тобто досягнення екологічних цілей за мінімальних витрат, зменшення вартості агропродукції, раціональне використання природних ресурсів, задоволення попиту на екологічно чисту продукцію. Доведено, що уповільнюють впровадження екологічних інновацій на аграрних підприємствах відсутність заходів стимулювання інноваційної екологізації виробництва, нерозвинутий ринок екологічних інновацій та відсутність достатніх фінансових ресурсів для зміни техніко-технологічних процесів, що можливо вирішити лише за умови співпраці всіх учасників органічного виробництва. Було виявлено, що підприємства, які впроваджують екологічні інновації забезпечують сталий розвиток підприємства в довгостроковій перспективі. А результат від впровадження еко-інновацій буде позитивний не тільки для підприємства, а й безпосередньо для споживачів, суспільства і держави в цілому.

Ключові слова: управління, сталий розвиток, екологічні інновації, агробізнес, еко-інноваційні технології.