

■ ЕКОНОМІКА ПРИРОДОКОРИСТУВАННЯ І ОХОРОНИ
НАВКОЛИШНЬОГО СЕРЕДОВИЩА

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**ECOLOGICAL AND ECONOMIC
IMPERATIVES OF SUSTAINABLE
DEVELOPMENT OF
AGROECOSYSTEMS[©]**

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In the article the constitutive direction of development of the agrarian sphere is investigated, it's economical, ecological and social components are highlighted. The multifunctional nature of sustainable development of agroecosystems, the necessity of transition to a nature-preserving model of development, and the harmonious coexistence of nature and society is shown. The institutional goals of ensuring the sustainable development of agriculture are revealed. The necessity of achieving by the Ukrainian economy the parity of intersectoral exchange and imperatives of the state solution of the problems, related to it, is found to be the necessary condition for sustainable development, which is provided by the balance of economic and environmental motivations at the level of economic entities. The main leitmotiv of sustainable development of agriculture problems is intersectoral parity, which will stimulate the process of modernization of the agrarian sphere.

The attention is focused on the need for balanced sustainability in the development of ecosystems, which is based on ecological agriculture, on innovative approaches to labor, self-realization, ensuring the existence of an optimal agro-ecosystem, what involves harmonious co-operation and the realization of the potential of nature and the economy of a particular territory. The balanced approach to strengthening the competitiveness of agrarian production, both in the country and abroad, is presented, taking into account the goals of sustainable development of rural areas and preservation of the environment. The emphasis is made on the need of implementation of Good agricultural practices, what is envisaged by the Association Agreement between Ukraine and the EU. The possibilities of implementing Good agricultural practices, which are based on the following factors: economic ability, environmental sustainability, social progress, safety and quality of food products, are determined. The main goal of the GAP is the introduction and implementation of a management strategy that would ensure appropriate understanding and monitoring at each stage of the production process. The significance of a radical change of the paradigm, in which the innovative component is intended to solve the imperatives of sustainable development is formulated. It includes, first of all, the provision of ecologically and economically balanced functioning of agrarian landscapes, shifting the emphasis from the intensive factors of economic growth to the cultivation of innovative technologies that respond the imperative ecological challenges.

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Keywords: sustainable development, rural territories, economic and environmental motivations, economic growth, proper agricultural practice, Agrarian ecosystems, Association Agreement between Ukraine and the EU.

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Setting the problem. In conditions of decentralization the need to take into account the structure of natural and anthropogenic systems, the level of development of productive forces and the nature of the production-ecological interaction of socio-economic development within a specific territory is significantly increased. Integration processes, processes of transnationalization aggravate the development of rural areas, leveling the infrastructure of the village thereby complicate the sustainable development of agroecosystems.

On the other hand, a balanced sustainability in the development of agroecosystems, based on ecological agriculture, on innovative approaches to labor, self-realization ensures the existence of an optimal agroecosystem that corresponds to harmonious co-existence and disclose the potential of the spheres of nature, society and the economy of a particular territory.

However, large enterprises are not interested in mass employment, the preservation of the environment, the development of rural areas, what is necessary for the state. Consequently, the existing development model has exhausted itself and is a threat to the future generations. Changing the nature of the relations of nature and society we change the methods of management concerning sustainable development. The expediency of a new paradigm of coexistence and interaction between society and nature, conditioned by new approaches, methods and means of forming an ecological culture and consciousness, is denoted by the development of communicative processes in the context of management of social consciousness. Harmonization of the relationship “society-production-nature” requires a balanced approach to strengthening the competitiveness of agrarian production, both in the country and abroad, taking into account the goals of sustainable development of rural areas and preservation of the environment.

The Association Agreement between Ukraine and the EU provides for the implementation of the goals of sustainable agrarian development, implementation of best practices of management of rural economy. However, the degree of development of these areas in scientific research is different. Over the last decade the idea of sustainable development of society has received a multi-dimensional theoretical interpretation. Therefore, provision of balanced sustainable development of agro-ecosystems is a major issue for the present.

Analysis of recent research and publications. Economic and environmental problems on the issues of sustainable development of argoecosystems and the related types of economic activity studied such Ukrainian scientists as: N.M. Andreeva [2], B.V. Bukrinsky [2], O.N. Verzhikhovsky [3], H.M. Kaletnik [6], L.S. Kupinets [2], O.L. Popova [7], S.K. Kharichkov [2] and others.

However, today's realities require the study of the experience of other countries, the recommendations of international organizations concerning the application of proper agricultural practices, which combine the concept of “nature and society”, what makes it possible to provide a viable environment.

Defining the aim of the research. The study is aimed at formulation and systematization of the principles of balanced sustainability of agroecosystem development.

Presentation of the main results of the study. The present stage of economic development is the basis for completing the creation and public recognition of the concept of sustainable development as a way of understanding this phenomenon, a guiding idea for

its coverage, creating the conditions and preconditions for macroeconomic stabilization and the formation of mechanisms for embedding the ecological component in the strategy of development of agrarian sector of the economy and socio-economic rural development.

The essence of the category of sustainable development is multipurpose and suggests, as a priority direction, the transition to a biosphere model of the development of natural resources, that is to a safe, in all aspects of its manifestation, development of the technosphere and the stable state of natural environment and their harmonious coexistence within the limits of the established territory. This means the transition to a new era of civilization, the goal and values of which are oriented to the stability of all spheres of society, preservation of the fundamental right to a life-giving and life-providing environment for future generations [2, p.34-67]. It should be noted that the rational basis for the formation of the concept of Sustainable agriculture is an unresolved global problem.

In particular, the problems of the elimination of hunger and malnutrition, the overcoming of poverty and squalor of rural population in some underdeveloped countries, global warming, degradation of land resources, pollution of groundwater in rural areas, destruction of natural agroecosystems, etc. are actual. In general, the livelier circumstances listed above determine the peculiarities of the targets for the sustainable development of agro-ecosystems at the global and national levels (see Table 1).

Table 1

Institutional bases and targets for sustainable agriculture development

Comparison criterion	The level of achievement of sustainable development	
	global	national
Authority regulating the development of the agrarian sector	UN Food and Agricultural Organization (FAO)	Ministry of Agrarian Policy and Food of Ukraine
Basic documents in the field of sustainable development of agriculture	Declaration of the World Food Security Summit, Madrid Declaration, Resolution “Agricultural Development and Food Security”, RIO + 20 Conference	“Concept of development of rural territories”, Order of the Cabinet of Ministers of Ukraine dated September 23, 2015 No. 995-p The Strategy for Sustainable Development “Ukraine – 2020”, Decree of the President of Ukraine dated January 12, 2015, No. 5/2015
The purpose of economic development	Increasing food security and steady production volumes increasing	Increasing the economic efficiency of the agrarian sector, increasing the export potential
social development	Ensuring employment and raising incomes, improving nutrition and improving living standards, improving living conditions in rural areas	Increasing the living standards and quality of life of the rural population, comprehensive improvement of rural areas, increasing the prestige of living in rural areas
environmental development	Rational use of natural resources and environmental protection	Rational use of natural resource potential of agriculture, preservation and improvement of ecology in rural areas

Source: developed by the author using [1; 4]

Agrarian nature systems should be considered as a research object of the noosphere processes. Then, according to the theoretical founders of the doctrine of the noosphere, these systems, integrating economic, natural and social processes, must be manageable. The complexity of solving the problem of achieving sustainable development of argoecosystems is due to:

- the high complexity of the system, the presence of a large number of different, interdependent elements that perform various functions;
- multicriteria of the concept of “sustainable development”;
- strengthening of the interconnection of the elements of the system with its development, which manifests itself in changing the behavior of the system when variations in the parameters of the environment, as well as inability to evaluate the entire system on the set of properties of its individual elements and vice versa;
- the specificity of agrarian relations, which manifest themselves in the impossibility of controlling the factors that shape the results of the functioning of the system;
- the presence of nonlinear connections between elements of the system, which leads to the emergence of uncertainty between them or “turning points of growth” [1;3].

The Paradigm of Sustainable Development of Agriculture in Ukraine, which is a qualitatively new techno-technological, organizational-economic, socially-advocated, ecologically balanced, consistent with the objective requirements of environmental imperatives, system. Its key elements are: the ecological balance of its elements, the priority of the problems of restoration of fertility of the land and agroforestry, an active state social policy for the development of rural communities and territories, which allows to gradually transfer the agrarian and food-processing sectors of the country on ecology-oriented advanced technologies.

Thus, the necessary condition for sustainable development is the provision at the level of economic entities the balance of economic and environmental motivations for sustainable development of agriculture. The urgent need for the Ukrainian economy is the achievement of the parity of inter-sectoral exchange and the imperative of solution by the state of interbranch parity problems; proposals for their solving, which stimulate the process of modernization of the agrarian sphere [2, p.67-79].

It is necessary to distinguish between the study of constancy as the objective property of the system (the desire to preserve its structure, internal and external relations), along with other attributive properties: integrity, emergency, structure, autonomy, interconnection of the system and the environment hierarchy, controllability of the plurality of descriptions, spatiality (territoriality), dynamism and static character and the applied research of the problems of ensuring ecological and economic sustainable development of specific ecosystems, especially in the study of ecological and economic balanced development of agroecosystems of different hierarchical spatial levels [4].

The Association Agreement between Ukraine and the EU provides for the development of cooperation on environmental issues, thus contributing to the long-term goals of sustainable development and the green economy, including integration of environmental policy into other areas of government policy (chapter 6 "Environment" section V). It also speaks of the development of sectoral strategies to improve the quality of air and water resources and manage them. Article 404 of Chapter 17 “Agriculture and Rural Development” provides for the promotion of modern and sustainable agricultural production, taking into account the need to protect the environment and animals, in particular the extension of the use of organic production methods and the use of biotechnology, the implementation of best practices in this area [9]. This is a provision of the European Union for cross-compliance, Good Agricultural Practices and others.

Thus, the negative side effects of the functioning of the traditional rural population have led to the need to apply more economies to environmentally sound farming practices, best agricultural practices. New concepts for agricultural development are Good Agricultural

Practice (GAP), Good Farmer Practice. According to the United Nations Food and Agriculture Organization (FAO), proper agricultural practices are a set of principles that should be applied to the production of agricultural products and processes following production in order to produce safe and healthy food and non-food agricultural products. It takes into account economic, social and environmental factors. This is a broad range of practices for the use of land, water, production of food and feed, plant protection, health protection and proper keeping of animals, harvesting and processing on the farm, use of energy and utilization of wastes, conservation of wildlife for the use of agricultural lands [5, p. 29-34].

Applying Good agricultural practices enables to obtain safe food products, and allows to combine the experience in the field of rational use of mineral fertilizers and pest control methods and, as a consequence, minimize the negative impact on the environment.

In general, the implementation of Good Agricultural Practices should promote sustainable agriculture and rural development, based on the following factors: economic ability, environmental sustainability, social progress, safety and quality of food. The main goal of the NAP (GAP) is the implementation and realization of a strategy of management that ensures appropriate understanding and monitoring at each stage of the production process. It is based on the following basic principles:

- economical and efficient production of sufficient quantities of safe and nutritious food products;
- conservation and enhancement of natural resources;
- support of viable agricultural enterprises;
- satisfaction of the demands of the society [5, p. 23-24].

The purpose of proper agricultural practices depends on the implementation of regulatory and trade requirements of the state, as well as on more specific requirements of specialized or niche markets. Buyers of products on the external market, in addition to the mandatory requirements, which are established in the legislation of the EU, may impose special requirements for production processes, safety and quality of products, packaging, marking, etc. For example, compliance with the requirements of Global GAP (Good Agricultural Practice) or the Standard of Food Safety Management System ISO 22000 [7, 8].

It is well-known, that in the new UN Program “Sustainable Development: Goals and Agenda 2030” for agriculture, the task to increase the productivity of agriculture is set up. In Ukraine, so far, the choice between productivism (increasing gross agricultural output) and ecologization has often been in favor of productivism. But European integration forces our state to put these tasks in conjunction with the search of approaches of their balanced solution.

Among the expected results of the implementation of the State Target Program for the Development of the Ukrainian Agrarian Sector for the period up to 2020, the traditional increase in gross agricultural output and exports as well as the improvement of the structure of agricultural lands will reduce the area of degraded lands, provide ecological safety, biodiversity conservation and the formation of the ecological network. It is obvious that increasing the volume of agricultural production at any price cannot be an end in itself for the agrarian sector. If productionism pursues only economic interests and is accompanied by terraricide – the destruction of land, as well as water pollution, excessive agro-ecological burden on the natural environment, then the very existence of the industry is questioned, and the food security of the state will undermine the stability of public life [6].

Conclusions. Thus, for our country, the Ukrainian specific features, as well as the definition of the real state of the agrarian sector of the country, is very important in the detailed study and disclosure of factors that have affected the removal from the vector of sustainable development of agroecosystems. That is a fundamental paradigm shift is necessary, in which innovation processes are designed primarily to meet imperative challenges, considering provision of sustainable environmental and economic functioning of agricultural landscapes, the shift from intensive factors of economic growth to cultivation of innovative technologies congruent with the environmental imperatives.

In this regard, agriculture of Ukraine has significant reserves as the principle of prioritizing the environmental friendliness of innovative processes remains at present untapped. Reproduction of agrolandscapes with an ecologically balanced composition on the background of the innovative development of agrarian economy, which is to be formed on a qualitatively new basis, is an imperative task. The main contours of the new paradigm of innovation-type development are, in our opinion, shaped in the context of the priority development of the eco-economic component.

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**АНОТАЦІЯ
ЕКОЛОГО-ЕКОНОМІЧНІ ІМПЕРАТИВИ СТАЛОГО РОЗВИТКУ
АГРОЕКОСИСТЕМ**

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У статті досліджено напрями розвитку аграрної сфери, виділено його економічну, екологічну, соціальну складову. Показано багатоцільовий характер сталого розвитку агроєкосистем, які є пріоритетним напрямом переходу до природозберігаючої моделі розвитку та гармонійного співіснування природи та суспільства. Розкрито інституційні цільові орієнтири забезпечення сталого розвитку сільського господарства. З'ясовано, що необхідною умовою сталого розвитку є забезпечення на рівні господарюючих суб'єктів балансу економічних та екологічних мотивацій, а головний лейтмотив сталого розвитку сільського господарства – нагальна потреба досягнення українською економікою паритету міжгалузевого обміну і пов'язана з ним імперативність державного вирішення проблем міжгалузевого паритету, що стимулює процес модернізації аграрної сфери.

Зосереджено увагу на необхідності збалансованої сталості у розвитку агроєкосистем, яка опирається на екологічне сільське господарство, на інноваційні підходи до праці, самореалізацію, на забезпечення існування оптимальної агроєкосистеми, яка відповідає гармонійному співіснуванню та розкриттю

потенціалів сфер природи, суспільства й економіки конкретної території. Розкрито збалансований підхід до посилення конкурентоспроможності аграрного виробництва, як в країні, так і за її межами з урахуванням цілей сталого розвитку сільських територій та збереження навколишнього середовища. Акцентовано на необхідності впровадження Належної сільськогосподарської практики, що передбачено Угодою про асоціацію між Україною та ЄС.

Визначені можливості реалізації Належної сільськогосподарської практики, яка базується на таких чинниках: екологічній стійкості, економічній спроможності, соціальному прогресі, якості і безпеці харчових продуктів. Головною метою НСП (GAP) є впровадження і реалізація такої стратегії менеджменту, яка б забезпечувала відповідне розуміння і моніторинг на кожному етапі виробничого процесу. Сформульовано значимість радикальної зміни парадигми, при якій інноваційна складова покликана, перш за все, вирішувати імперативні установки, а саме: забезпечення еколого-економічного збалансованого функціонування агроландшафтів, перенесення акценту з інтенсивних чинників економічного зростання на всемірне культивування інноваційних технологій, співзвучних імперативним екологічним установкам.

Ключові слова: сталий розвиток, сільські території, економічні та екологічні мотивації, економічне зростання, належна сільськогосподарська практика, агроекосистеми, Угода про асоціацію між Україною та ЄС.

Табл. 1. Літ. 9.

АННОТАЦИЯ ЭКОЛОГО-ЭКОНОМИЧЕСКИЕ ИМПЕРАТИВЫ УСТОЙЧИВОГО РАЗВИТИЯ АГРОЭКОСИСТЕМ

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В статье исследовано конститутивное направление развития аграрной сферы, выделено экономическую, экологическую, социальную составляющую. Показан многоцелевой характер устойчивого развития агроэкосистем, который является приоритетным направлением перехода к природосберегающей модели развития и гармоничному сосуществованию природы и общества. Раскрыты институционные целевые ориентиры обеспечения устойчивого развития сельского хозяйства. Выяснено, что необходимым условием устойчивого развития является обеспечение на уровне хозяйствующих субъектов баланса экономических и экологических мотиваций, а главный лейтмотив устойчивого развития сельского хозяйства – неотложная необходимость достижения украинской экономикой паритета межотраслевого обмена и связанная с ним императивность государственного решения проблем межотраслевого паритета, что стимулирует процесс модернизации аграрной сферы.

Сосредоточено внимание на необходимости сбалансированной устойчивости в развитии агроэкосистем, которая опирается на экологическое сельское хозяйство, на инновационные подходы к труду, самореализацию, на обеспечение существования

оптимальной агроэкосистемы, которая отвечает гармоничному существованию и раскрытию потенциалов сфер природы, общества и экономики конкретной территории. Раскрыт сбалансированный подход к усилению конкурентоспособности аграрного производства, как в стране, так и за её пределами, с учётом целей устойчивого развития сельских территорий и сохранения окружающей среды. Акцентируется внимание на необходимости внедрения Надлежащей сельскохозяйственной практики, что предусмотрено Соглашением об ассоциации между Украиной и ЕС.

Определены возможности реализации Надлежащей сельскохозяйственной практики, которая базируется на следующих факторах: экономическая способность, экологическая стойкость, социальный прогресс, безопасность и качество пищевых продуктов. Главной целью НСП (GAP) является внедрение и реализация такой стратегии менеджмента, которая бы обеспечивала соответствующее понимание и мониторинг на каждом этапе производственного процесса. Сформулирована значимость радикального изменения парадигмы, при которой инновационная составляющая призвана, прежде всего, решать императивные установки, а именно: обеспечение эколого-экономического сбалансированного функционирования агроландшафтов, перенесения акцента с интенсивных факторов экономического роста на всемерное культивирование инновационных технологий, созвучных императивным экологическим установкам.

Ключевые слова: устойчивое развитие, сельские территории, экономические и экологические мотивации, экономический рост, Надлежащая сельскохозяйственная практика, агроэкосистемы, Соглашение об ассоциации между Украиной и ЕС.

Табл. 1. Лит. 9.

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