FORMATION OF THE NATURAL RESOURCE ECONOMICS IN THE SYSTEM OF ENVIRONMENTAL AND ECONOMIC SECURITY IN UKRAINE

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Abstract: The article examines the modern specifics of the formation of the system of ecological and economic security and the construction of an effective economy of nature use in Ukraine. Modern concepts aimed at solving the problems of ecological and economic security in conditions of limited and depleted natural resources are considered. The problems of ensuring environmental safety in the business processes of modern enterprises have been identified. The methodological basis of the study of the problems of ensuring environmental safety and economic development was studied. It is proposed to apply greening of production as a priority direction of economic development to build an effective economy of nature use.

Keywords: Ecological safety, Economics of nature use, Greening of production, Ecological and economic efficiency.

1 Introduction

The modern specificity of approaches to environmental protection involves a significant variety of approaches to the practical implementation of environmental standards in the process of conducting economic activity. At the same time, it should be noted that quite often the issues of nature protection and the need to ensure the expanded and effective development of the economy are often considered as separate and sometimes mutually contradictory activities. All this leads to the accumulation of systemic negative environmental consequences due to insufficient consideration of possible impacts on the surrounding natural environment in the process of planning and implementation of economic policy, strategic planning, and design of the development of the national economy. Therefore, the emergence of a problem related to the fact that environmental issues cannot be solved only by singling out environmental protection as one of the directions of socio-economic development, considering it separately from the general complex of existing socio-economic and technological problems, is indisputable. It should be noted that economic development, in general, causes an increase in the volume of harmful emissions, and also leads to the gradual depletion and irrational use of natural resources, contributing to the increase of anthropogenic load on the environment. That is why a situation existing in the system of ecological and economic nature management requires the implementation of a sound economic policy aimed at balancing the ecological and economic goals of development and thereby contributing to the formation of an effective system of ecological and economic security.

In addition, the use of various tools to create a business environmental security system is actively implemented in modern enterprises and is one of the criteria for the effectiveness of their activities. In this aspect, approaches to ensure the greening of investments in production activities, the formation of mechanisms for improving the system of environmental taxation in the aspect of ensuring the ecological and economic impact on the activities of business entities, and methodological approaches to the improvement of economic tools of environmental management to ensure the balanced development of the environment are becoming particularly relevant. All this also leads to a growing need for in-depth research on ensuring the ecological and economic safety of the business and solving the pproblems of rational nature management.

2 Literature Review

The study of the issues of ensuring the effective use of nature and reducing the anthropogenic burden on the surrounding natural environment in the process of economic activity is not new for scientists, and the key provisions of this issue are widely disclosed in the works of such Ukrainian scientists as O. Apostolyuk [2], O. Binert [4], I, Britchenko [7], A. Cherep [9], P. Ghisellini [20], K. Kostetska [22], R. Kothari [23], T. Mishustina [24], O. Pavelko [25], T. Shmatkovska [28-32], R. Sodoma [34-37], S. Voloshyna [43], I. Yakoviyk [44], Ya. Yanyshyn [45], P. Young [47] and many others.

In addition, it is worth noting the significant contribution made to the study of aspects of ensuring environmental and economic safety of economic activity in modern business conditions by such scientists and practitioners as O. Agres [1], I. Balaniuk [3], A. Boiar [5], A. Braga [6], Y. Chaliuk [8], M. Dziamulych [10-19], S. Schaltegger [26], N. Semenyshena [27], O. Stashchuk [38-40], A. Tiurina [41], D. Tiwari [42], O. Yatsukh [46], and others.

At the same time, today`s urgent need is to deepen research in the field of integration of economic and ecological security policy, improving the quality of the natural environment and ecological conditions of human habitation, forming a balanced ecologically oriented model of economic development, guaranteeing ecological and economic security of conducting business activities in general.

3 Materials and Methods

The methodological basis for ensuring ecological and economic security in the field of nature economy is a set of methods and techniques for conducting research on the availability, movement, and efficiency of the use and protection of natural resources. This methodological foundation is based on general scientific and special methods of scientific knowledge.

An important place among the special methods of ensuring environmental and economic security is occupied by economic and statistical methods, which are systematized according to their intended use in the order of the sequence of economic and statistical research:

- A collection of primary statistical information;
- Statistical compilation and processing of primary information;
- Analysis of statistical information [33].

The method of comparative (variant) calculations can be used to compare the economic efficiency of various environmental protection measures and environmentally safe production technologies. Comparative calculations can be used to compare normative and actual costs with the subsequent clarification of the reasons for their discrepancy.

With the aim to coordinate and interrelate the components of the studied phenomenon, to maintain the balance of quantitative proportions, the balance method of research is used. This method plays an important role in the preparation of national economic coordination plans.

In the economics of nature use, mathematics is applied through the construction of economic-mathematical models, which have an economic meaning and are designed to highlight the most important features of the studied object, facilitate cognition and determine the ways of effective development of the process. Mathematical modeling in the economics of nature use is applied

when optimal quantitative expressions of predicted indicators are determined on the basis of source information using software methods [33].

4 Results and Discussion

Among the concepts aimed at solving the problems of ecological and economic security in the conditions of limited and depleted natural resources, the leading place belongs to the model of ecologically oriented development, which contributes to the simultaneous solution of two key issues: ensuring economic development and reducing the negative impact on the environment.

At the international level, environmental and economic policy is primarily aimed at ensuring coordinated actions in the field of environmental safety, establishing norms, rules, and standards of state behavior in this field. In particular, a number of documents in this direction are being developed under the auspices of the UN:

- Agreed principles of ecological integration of countries into the world community;
- A single international system of environmental monitoring;
- Unified methods of assessing the state of natural resource potential;
- Unified methods of environmental impact assessment;
- The general methodology for assessing the risk of occurrence and development of emergency situations and disasters of a natural and man-made nature;
- Unified rules and regulations in terms of personnel and equipment for the rapid response service for emergency situations;
- International conventions, agreements, rules, and procedures that ensure the coordination of joint actions in the field of risk assessment and the implementation of measures to prevent and eliminate the consequences of emergencies and disasters of a natural and man-made nature [41].

At the same time, the problem of environmental security of business lies in the question: is it possible to avoid threats to ecological and economic security, not reducing, but on the contrary, accelerating the development of productive forces and at the same time preserving the biosphere? It is quite clear that the coexistence of these two trends also implies the presence of limitations for their general development and the search for compromise solutions since a bias in one direction generates negative consequences. The most effective and efficient levers in the system of ecological security are undoubtedly the economic mechanisms of nature management. The inclusion of an environmental protection component in the price structure is intended to correct business defects associated with the incomplete reflection of certain costs and benefits related to environmental pollution and its control. Implementation of the main principle of ecological business – "the polluter pays" – can not only increase the value, improve or support the quality of the environment, but also contribute to reducing the production of goods, from the sale of which these payments come. In these conditions, the principle of the inevitability of punishment should be applied, and the number of fines (if a stricter measure is not applied) should far exceed the value of the damaged objects in the natural environment [47].

It should also be noted that the development of scientific directions of research in the field of ensuring environmental and economic security requires the mandatory use of a holistic methodological basis and its elements - in particular, approaches, methods, and theories that determine the intended purpose of practical results (Table 1).

Table 1: The methodological basis for the study of the problems of ensuring environmental safety and economic development

Scientific approaches to research	Structural elements of the methodology
Institutional approach	Definition of the object and subject of research
The systemic approach	Goal setting and tasks
The systemic and functional approach	Formation of a conceptual model for ensuring environmental and economic security
Dialectical approach	Identification of threats and risks of environmental and economic security
Functional approach	Diagnostics of the level of environmental and economic security
The structural and functional approach	The implementation mechanism and models for ensuring environmental and economic security
Program-targeted approach	Formation of a strategy for ensuring environmental and economic security
Scientific approaches to research	Structural elements of the methodology

Source: generated by the author.

Thus, we come to the conclusion that the study of modern trends in nature management and the use of resources in economic activities prove that the current trends in the movement towards achieving environmental goals are accompanied by a shift in emphasis in the system of ecological and economic security. In this aspect, some scientists suggest considering the right to pollute the environment as a specific part of natural capital, which leads to a change in subject-object relations in nature management. And although the ultimate goal remains the reduction of anthropogenic impact, the process of virtualizing nature use, transferring it to the sphere of waste and emissions trade, shifting attention directly from natural resources to technological development and its consequences is taking place. Today, nature management is turning into waste management, and its basis is the technosphere. The latter requires an update of approaches to ensuring the environmental security of the strategic potential of the progressive dynamics of the development of the productive forces in the regions of Ukraine based on taking into account global development factors, determining the main trends of socio-economic development and structural shifts of the productive forces, as well as an integral assessment of the ecological state of the regions [23].

Thus, the strategy of ensuring ecological and economic security moves into the plane of forming a general system of ecologically oriented development of society, which involves comprehensive assistance in establishing optimal parameters of the ecological and economic system, that do not threaten its integrity and create opportunities for dynamic development and establishing a balance between the needs of society and limitations of the natural environment. Therefore, this type of development is able to effectively ensure the preservation of the assimilation potential of the natural environment for safe use in the process of economic activity.

Therefore, in addition to the problems, the development of a new paradigm for ensuring environmental and economic security is of primary importance. Considering that the process of its provision in the theoretical-applied aspect is a complex object of research, which is primarily caused by a set of different elements that perform different functions, we consider it necessary to use a system-functional approach and appropriate tools. Thus, the main theoretical and methodological provisions for ensuring ecological and economic security are based on the imperatives of the concept of sustainable development, the theory of external effects, the theory of public welfare, the general theory of security, as well as on a number of state conceptual provisions, in particular: Concepts of balanced development of

agroecosystems in Ukraine for the period up to 2025; Concepts of the national environmental policy of Ukraine; The main directions of the state policy of Ukraine in the field of environmental protection, use of natural resources and ensuring environmental safety, etc. [27].

On the basis of the conducted research, several scenarios for ensuring the ecological and economic security of the strategic potential of the progressive dynamics of the development of the productive forces in Ukraine have been determined [23].

The territorial scenario involves an orientation towards reducing the man-made load on territorial recipients (elements of the natural environment, people). This scenario determines the priority of the formation of management strategies for the protection of recipients from harmful man-made influences. At the same time, the main territorial recipients are considered, as a rule, a person (his health, working capacity, normal conditions of recreation, etc.), natural complexes, and ecosystems (ensuring their stability, not exceeding the assimilation potential, structural integrity), material objects of production and life activities (observance of normal conditions for their preservation and functioning). Accordingly, management decisions within the framework of the territorial scenario are primarily aimed at ensuring compliance with standards of permissible levels of pollution and harmful man-made impacts, which are considered safe for the specified recipients [21].

The organizational and management scenario is primarily focused on reforming existing management mechanisms (institutional, regulatory, administrative, economic, etc.) and introducing the latest management technologies. It provides for methodological and methodical reform of the management strategy based on the involvement of more effective mechanisms and tools. As a rule, the main efforts are aimed at improving the structure and tools of the economic mechanism of technogenic and ecological safety management [23].

The technological scenario provides for the primary identification of the most man-made and dangerous objects and the technological and technical root causes of excessive load on the environment and the development of organizational and technical measures to eliminate or minimize their harmful effects. The technological scenario emphasizes the search for “key links” of the regional technogenic-ecological crisis and the formation of management decisions regarding their “disposal” or transfer to an ecologically safe functioning mode [21].

Moreover, the system of environmental and economic security includes a number of elements and subsystems that closely interact and logically complement each other. First, these are the subjects of ensuring environmental security (state authorities, local self-government bodies, and agricultural producers) and the object (ecosystem), the safety of which these subjects must ensure, and the principles and functions of ensuring ecological and economic security. The main goal of the ecological and economic safety system in such a case is to prevent the occurrence of environmental threats and risks, and their timely detection, localization, and elimination. To realize this goal, tasks are formed and performed taking into account the specifics of the object of ensuring environmental and economic security. Knowledge of the essence of the principles enables subjects to consciously organize their activities and accordingly influence the process of ensuring environmental and economic security in general [27].

Ensuring the integration of economic and environmental development largely depends on the transformation of the economy and structural changes which occur regardless of its state. At the same time, in some cases, such changes play the role of a structural limitation of growth, while in other cases, they create prerequisites for a rapid rise. Structural transformations are also the cause of the economic crisis, which can be overcome thanks to changes in the composition of driving forces and sources of economic growth. Therefore, a prerequisite for the sustainable development of Ukraine is the integration of environmental policy into sectoral and regional plans and programs in order to find opportunities for their mutual strengthening, as well as coordination of environmental priorities. However, for the sectoral ministries and agencies, this has not yet acquired primary importance and is often perceived as setting restrictions on sectoral activities, creating difficulties and additional costs for the purpose of developing a specific industry. Strategic planning in Ukraine is not focused on ecological development, but only on socio-economic development, and practically does not take into account the third component of sustainable development – the environment. The reflection of issues of environmental protection in the plans of ecological and economic development is done by preparing a small separate section that does not contain environmental requirements and a description of alternative ways of development [41].

5 Conclusion

Therefore, it can be stated that the real threats to ecological and economic security confirm the need to improve the system and the process of its provision, which involves prevention of these threats, as well as their detection and localization, and the formation of a directly effective mechanism for preventing the occurrence of danger to human health and the degradation of natural resources, and protect biological diversity from the possible negative impact of ecologically destructive factors impacting the surrounding natural environment. Therefore, it is very important, in contrast to the traditional idea, to consider the system of ecological and economic security not as an element of purely environmental policy, but as a set of elements and interconnected subsystems: informational-analytical, supply, functional-instrumental, and result-targeted.

In addition, one of the priority directions of economic development should be the greening of production, the implementation of which will allow solving specific environmental problems at the level of enterprises in the conditions of the environmental crisis. Environmentalization is possible in two directions. The first one is the comprehensive environmentalization of the entire production, which involves the use of environmentally friendly fuels, technologies, and highly efficient cleaning equipment followed by waste disposal. However, direct implementation is usually associated with significant capital expenditures and long implementation times. The second direction involves the greening of the entire management system of the production complex by taking into account the environmental factor in its structural elements.

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Primary Paper Section: D

Secondary Paper Section: DI, DJ, DK, DN, EH