

РОЗДІЛ 1
РОЗВИТОК СУЧАСНОЇ ПАРАДИГМИ МЕНЕДЖМЕНТУ
В УКРАЇНІ: НАЦІОНАЛЬНІ ТА ГЛОБАЛІЗАЦІЙНІ
АСПЕКТИ

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FEATURES OF ENSURING THE ENVIRONMENTAL AND
ECONOMIC SECURITY

The concept of the national security of Ukraine is one of the most important conditions for ensuring national interests in the economy, including the transition to sustainable development, which provides for a balanced solution of socio-economic tasks and environmental problems. The principle of long-term sustainable development serves as a conceptual basis for a modern system of views on the relationship between man, society and nature. The transition to sustainable development involves ensuring security in all respects, and in the close interconnection of the country's overall security and sustainable development, all this determines the conditions for the continued existence of society. Obviously, this relationship should be based on the results of a comprehensive analysis of the totality of social, economic and environmental indicators of society development [9, 10].

Implementing the transition to a sustainable development path requires the formation of a new strategy that is environmentally and economically balanced. The concept of combining economic, social and environmental security opens up new methodological horizons for the study of security problems. A comprehensive study of the problems of security and sustainable development is possible in the context of creating a concept of environmental and economic security at various levels of management.

The most burning issue of nowadays is the development of theoretical foundations for effective ensuring of environmental and economic security and the national economy development on the

basis of monitoring and diagnosis of real threats, as well as economic, social, organizational and other measures aimed at overcoming negative trends, localizing and eliminating them, preventing the occurrence of events that pose a threat to the economic security [8].

The consideration of economic activity in interrelation with the ecological component is a relatively new phenomenon for economic science to explore. Various aspects of the problem of ensuring environmental and economic security began to attract increasing attention of scientists and researchers from all over the world. However, the issues concerning the problems of economic security, its mechanisms and methods still remain more developed than the other ones. The key aspects of the problem of the unity of economic efficiency and ecological security of the functioning of economic systems is reflected in a number of fundamental scientific works, written by Belik I.S., Nesterenko N.M., Mekush G.Y., Polovyan A.V. and others.

At the same time, it should be noted that the methodology and methodic approach to diagnosing the formation, functioning and development of a system for the effective provision of environmental and economic security in recent scientific publications have not been sufficiently developed. Specific measures of systemic influence on economic and environmental mechanisms are generally weakly related to the results of the analysis of the degree of influence of threats to economic security, which, combined with unreliable diagnostics, reduces the effectiveness of the security system functioning both of enterprises, regions and the state as a whole.

The overall purpose of this paper is to put everyone in the picture about the main features of ensuring the environmental and economic security.

The problem of the relationship between society and the environment requires an urgent solution, the effectiveness of which is determined by the understanding of the necessity to establish a rational relationship between environmental and socio-economic systems, the interpretation of which will determine the ways for the further development of any business entity.

The level of ecological well-being of the country and its individual regions is considered to be a key indicator reflecting the

ecological development of the society. One of the important conditions on the way to economic development is the reduction of anthropogenic pressure on the environment and the activities of state policy-making entities towards the use of the experience of industrially developed countries to reduce threats to environmental sustainability, which have negative consequences. Today, the main destabilizing factor for the economy of any country is the increase in the number of emergencies, as well as their negative impact on the environment. But at the same time they are also a stimulating factor for achieving sustainable development [7].

At the same time, the complexity and uncertainty of the qualitative and quantitative parameters of environmental security presupposes the use of an integrated approach to its formation as an important prerequisite for solving the economic, social and political problems of society. Taking into account the constant evolution of internal and external components of environmental security and the absence of their clear boundaries, it can be argued about the need for economic decisions with a tentative consideration of the components of security.

One of the generally accepted economic indicators for the formation of environmental security is the index of environmental efficiency. The environmental performance study identifies the country's achievements in terms of the state of the environment and the management of natural resources on the basis of 22 indicators that reflect various aspects of the state of the environment and the viability of the ecological system, the conservation of biological diversity, climate change, public health, economic practices and the degree of economic activity burden on the environment, as well as the effectiveness of the state policy in the field of ecology [3].

The next important indicator that characterizes the economic aspects of environmental security is the index of sustainable development of society, a combined indicator that measures the achievements of countries in the world and individual regions in terms of the sustainability of social development [4].

The concept of sustainable development has a direct economic and technological rationale, the essence of which can be described by the so-called «5R» principles of a closed cycle economy: Setting limits for energy and material consumptions (Reduction);

Replacement of non-renewable resources with renewable ones (Replacement); Recovery of necessary structural components from recycled waste (Recovery); Recycling of waste (Recycling); Multiple use of products (Reuse).

In this sense, sustainable development assumes that the stock of capital assets (physical, natural and human capital) remains unchanged or increases over time.

Classification by a sign of «the kind of influence of destructive forces» not only reveals the sources of danger, but also reveals the relationship between the main types of security. Therefore, formation of the influence matrix (table 1) allows us to identify the cause-effect relationships and identify common causes of threats and consequences of impact for economic and environmental security [2].

Table 1

The cause-effect relationships of types of security matrix [1, 2]

Consequences of influence or threats	The types of security allocated by									
	Type of destructive influence	areas of activity								
		Economic	Environmental	Production	Investment	Scientific and technical	Social	Financial	Demographic	Political
Damage from the influence of destructive natural factors on society and production	Geo- and biophysical	++	++	+	+	+	+	+	+	-
Damage or danger arising from modern technical systems and production	Technical and technological	++	++	++	+	+	+	+	+	+
Threats caused by inherent contradictions in modern society	Public	+	+	+	+	+	+	+	+	+

Note to the Table 1:

++ *strong influence*; + *weak influence*; - *insignificant influence*.

In addition, the presented matrix of mutual influence reflects the interrelation of ecology and economics within the technosphere and makes it possible to proceed to the compilation of a list of problematic ecological and economic situations. The formation of a matrix of problematic ecological and economic situations on the basis of such a sign as «the type of influence of destructive forces», allows to rank the dangers and establish priority ones.

The application of a systematic approach to the subject and objects of environmental and economic security makes it possible to identify the basic properties of the ecological and economic system, to identify threats acting on the part of destructive natural forces and modern technical systems and industries, and to characterize some of the priority properties (table 2).

Table 2

Impact of threats on basic properties of ecological-economic security [1, 2, 4, 10]

Properties	Criteria	Types of threats related to the properties of environmental and economic security	Effects
Ability to self-development	Sufficient resources for simple and extended reproduction	Depletion of natural resources. Irrational use of non-renewable and renewable natural resources. High depreciation of the fixed assets, in particular environmental equipment and facilities. Imperfection of legislative base and economic mechanism of the nature protection activity and nature management. Emergencies of natural origin. Increase in the use of natural resources.	Decrease of the ecological potential of the territory. Termination of activity of companies – nature users and local industry enterprises. Loss of jobs and slowdown in economic growth. Crisis situation in the economy: slowdown in the pace of development due to the inability to locate new enterprises and infrastructure development and so on.
Ability to withstand destabilizing factors	The presence of adaptive mechanisms to external influences	Reducing the reserve of ecological capacity, technology and assimilation potential of the territory. The typical errors of expert research in the expansion of the technosphere and low predictability of natural disasters. The increase of anthropogenic load etc.	Economic damage from environmental pollution, public health. The emergence of disaster zones due to the loss of the natural environment of the property of self-healing. The pressure of society on nature, which exceeds its capabilities, the growth of environmental costs and inefficiency of the economy. The increase of costs on restoration and compensation of the natural resources. Global manifestations of technogenesis.
Ability to provide interaction. System Integrity	Balanced development of all subsystems	The use of environmentally incompatible technologies and technical means. Violation of the natural balance of natural systems. Involvement of public ecological goods into market circulation.	Change in the structure of final consumption. Depletion of the main elements of the natural environment by the basic components. Increase in industrial expansion.

Analysis of the consequences for the main properties of environmental and economic security from the impact of threats indicates that the main threats in terms of the scale and severity of the consequences affect the basic characteristics of the system as ability to self-development and the ability to withstand destabilizing factors. Therefore, for an objective assessment of the level of environmental and economic security, the criteria characterizing the basic properties of the system can be used.

This approach to estimation the level of environmental and economic security, which requires the verification of all natural-technical systems to be consistent with the ability to withstand destabilizing factors and the ability to self-development according to the criteria «the availability of adaptive mechanisms to external influences» and «sufficient resources for simple and extended reproduction». The establishment of security criteria allows us to proceed to the formation of a system of indicators that assess the level of environmental and economic security.

The above-mentioned approach to assessing the level of environmental and economic security can be supplemented by a resource approach that is based on determining the level of environmental security, conditions and quantitative parameters of human habitat elements that are used as a resource in any economic system. While the resource approach is based on the allocation of general quantitative characteristics of the organization of ecological systems intended for the regulation of economic activities, an approach to estimation the level of environmental and economic security is based on environmental standards, in particular, such as environmental capacity and technology. The level of ecological and economic security is integrated with the quality of the ecosystems of the territory and the intensity of its change as a result of anthropogenic impact. The quality of ecosystems is quantitatively characterized by the value of the ecological reservoir (capacity), which is defined as the difference between characteristics expressing the quality of its current and maximum permissible state.

Thus, the level of ecological and economic security is estimated by the degree of correspondence of the ecosystem current state to accepted standards and the ability to withstand anthropogenic load, to restore the lost property or to enter a new qualitative state that

satisfies the conditions of stability of the natural economic community [6].

Another approach, which is widely used to assess environmental and economic security, is an indicative one, was proposed by the Organization for Economic Co-operation and Development. It is based on the use of indices and indicators (figure 1), which are structured around the main spheres of life and elements of the natural environment.

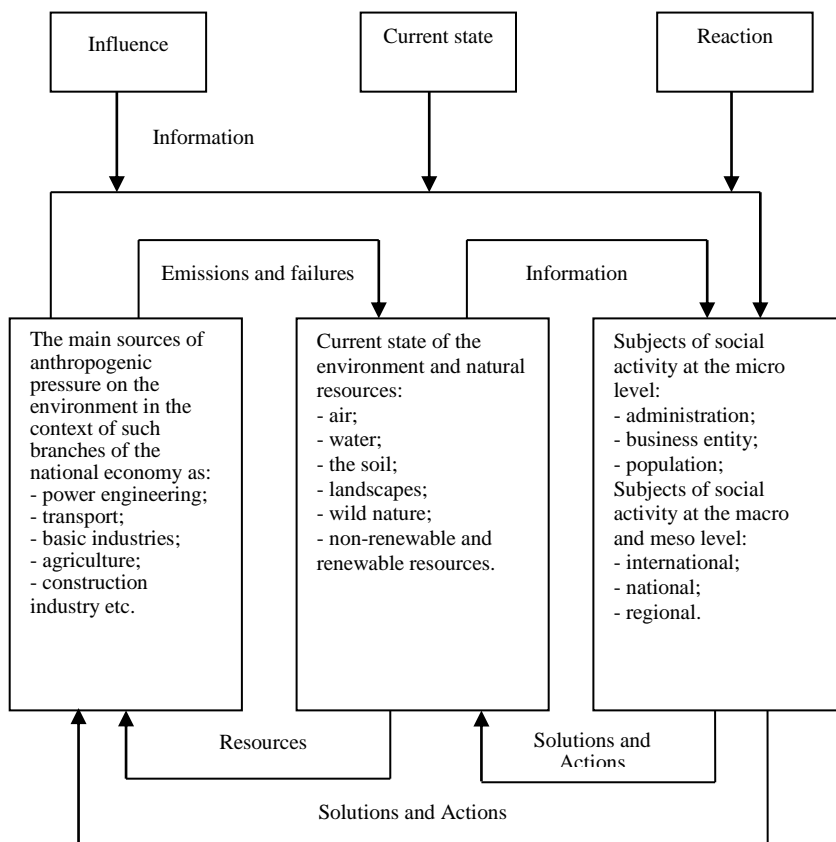


Fig. 1. The indicative-index approach to assessing the level of environmental and economic security [2]

The indicative-index approach is used to determine the

consequences of human impact on the environment, and a description of the state of «influence → position → reaction» indicators.

The first group includes indicators of «influence», characterizing the anthropogenic load, the use of natural resources and their dynamics. On the contrary, the second one consists of indicators of «state», describing the quality of the environment, the quantitative and qualitative level of the reserves of natural resources. And finally, the third group includes indicators of «reaction», reflecting the public's response to changes in the state of the environment: prevention or mitigation of negative consequences, adaptation to them, and compensation for damage caused.

The advantage of the indicative-index approach over the resource one is that it allows a high degree of aggregation of indicators and their use in a consolidated form for a territorial and cross-country comparison of the levels of man-caused load and the current state of the environment.

Resource and indicative-index approaches can be successfully used to determine the level of environmental and economic security. However, to determine the level of environmental and economic security, the degree of environmental destabilization and the stability of its basic elements, it is extremely important to use such aggregate indicators as the technological capacity of the environment, the ecological capacity of the territory, and the assimilating potential.

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The existing environmental protection mechanisms, created in the 80's of XX century for the regulation of anthropogenic impact on natural complexes, less take into account the ideology of sustainable development. The most important parameters for them, adopted as standards, were quantitative estimates of the limits of exposure to natural complexes, the non-exceeding of which guaranteed safe living conditions.

Inclusion in the system of assessing of the environmental and economic security the indicators characterizing the degree of

environmental destabilization (technological capacity, environmental capacity, etc.) will allow objectively establish the threshold of the ability to man-made impact and restore the lost property (or to enter a new qualitative state). In turn, an assessment of the level of environmental and economic security requires the application of indicators of sustainability of the economic and natural resource potential of the territory. The evaluation scheme should consist of two modules, the results of which are aggregated into a composite indicator.

Conclusion. The stability of the economy reflects the strength and reliability of its main elements. According to Kopteva K.V., one of the main indicators of sustainability is considered to be the long-term stability without sharp fluctuations in economic, social and environmental indicators with a gradual but steady elimination of existing disproportions [5].

In attempts to find the ways to move to a sustainable development path, one can identify the need for economic diversification and the strengthening of preferential control over the environment. However, it is not advisable to reduce everything exclusively to the solution of environmental problems, as well as to assert that the task of protecting the environment is more important than economic growth. It is important to strike a balance between the three integral components of sustainable development in the economy, the environment and the social sphere.

Due to numerous attempts to find the ways to transition to the path of sustainable development, we can identify the need for economic diversification and strengthening of the control over the environment. However, it is not advisable to reduce everything exclusively to the solution of environmental problems, as well as to assert that the task of protecting the environment is more important than economic growth. Therefore, it is important to strike a balance between the economy, the environment and the social sphere as integral components of sustainable development.

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