

FACTORS AND CONDITIONS OF THE ENVIRONMENTAL AND ECONOMIC SECURITY FORMATION IN UKRAINE

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Abstract: The article examines the peculiarities of the formation of the ecological and economic security system and the specifics of its principles. The relevance of the transformation of approaches to understanding the essence and principles of ecological and economic security in the context of the need to ensure sustainable development is substantiated. The levels of ecological and economic security and the peculiarities of changes in profits and costs during the transition of the economic system and business entities between these levels are determined. The principles of implementation and formation of economic tools for ensuring environmental safety are proposed.

Keywords: Ecological and economic security, Ecosystem approach, Ecological management, Levels of ecological security.

1 Introduction

At present, Ukraine is witnessing the unfolding of trends regarding the deterioration of the ecological quality of the environment, which is caused by a significant increase in the anthropogenic and technogenic load on it. All this requires maximum efforts to ensure general resource and environmental security in the field of nature management, as well as in the field of agriculture. Ignoring the ecological and economic principles of running an agrarian business leads to the acceleration of the processes of ecological depletion of Ukraine's unique land resources, reduces the ecological and economic efficiency of management, and thus leads to an increase in the ecological danger of the consumption of agricultural products.

At the same time, ecological and economic security involves achieving the maximum productivity of the economic system under various external influences, increasing resistance to these influences, and preserving the ability to self-regenerate. That is, there is an objective need to achieve a balanced interaction between society, production, and the surrounding natural environment based on compliance with the laws of biosphere development.

In this aspect, ecological and economic security must ensure the general internal interaction of the elements of the economic system, in which high rates of expanded reproduction of production and economic growth must necessarily be accompanied by the preservation, continuous improvement, and development of both individual spheres and the entire environment.

That is why the need to research the conditions under which the accumulation of ecological potential will outpace the rate of growth of the economic potential of society and the state is becoming particularly relevant at present. The result of such research should be the search for a balance between maintaining a favourable ecological environment and ensuring the appropriate pace of economic development, on the basis of which sustainable general social progress will be ensured.

2 Literature Review

Many scientists have studied the problems of practical provision of ecological and economic security in the context of improving the efficiency of agricultural land use. This problem is most widely disclosed in the works of such scientists as O. Agres [1], V. Baranova [3], A. Boiar [5], A. Iskakov [15], T. Kulinich [17], I. Lytsur [19], E. Mishenin [21], V. Nahorny [23], O. Savchenko [28], T. Shmatkovska [29-32], O. Stashchuk [37-39], I. Voronenko [40], V. Yakubiv [42], Ya. Yanyshyn [44], O. Yatsukh [46] and others. It is also worth noting the significant contribution that was made to the study of issues of generalizing the conceptual foundations of ecologically safe and balanced agricultural management based on ecosystem management, which is highlighted in the studies of such scientists as O. Apostolyuk [2], O. Binert [4], M. Dziamulych [6-14], V. Kostyuchenko [16], G. Leskiv [18], M. Melnyk [20], N. Mykhalyska [22], N. Popadynets [24-26], R. Sodoma [33-36], O. Vovchak [41], A. Yakymchuk [43], I. Yarova [45] and many others.

However, the constant changes taking place in the field of ensuring environmental and economic security at all levels require the implementation of ways of further theoretical and practical research in this direction. In particular, the determination of strategic goals in the field of ensuring ecological and economic security of agrarian business from the point of view of deepening its conceptual platform and the need for the formation of an appropriate organizational mechanism is gaining special relevance.

3 Materials and Methods

The concept of ecological and economic security is based on the basis of ensuring sustainable development in the field of agrarian nature management, on the basis of which the goals of effective economic growth and safety for the environment are achieved. The implementation of such a concept is based on the application of the principles of the strategy of sustainable development of agricultural nature management, which include:

- Partnership – active interaction between different groups of stakeholders in order to ensure stable agricultural production;
- Integration – promoting the integration of environmental and social thinking into management decision-making processes and innovative ways of conducting environmentally responsible business;
- Ecosystem and environmental management – the emphasis is placed on prevention, not elimination of negative environmental consequences;
- Justice for all generations – a fair distribution of costs and effects of nature management between generations to stimulate the use of socially and ecologically responsible methods in order to minimize the environmental responsibility of future generations;
- Civilized competitiveness – support of effective market mechanisms that ensure the use of innovative ecological methods of nature management, determining the links between ecological stability, economic productivity, social well-being (comfort), and competitiveness [21].

At the same time, the study of ecological and economic security can be carried out in two directions – “the impact of the ecological and economic system on the environment” and “the perception by the ecological and economic system of the reaction of market subjects to the nature of its action”, which correspond to the following methodological approaches:

- On the basis of the study of the level of load of the ecological and economic system on the environment, that is, according to the indicators of the level of environmental

safety;

- Based on the analysis and assessment of indicators of the state of the ecological and economic system [27].

Applying these two approaches in a complex manner, there is an opportunity to choose a priority between the greening of production and consumption to ensure the ecological and economic security of all market subjects.

4 Results and Discussion

As is known, ecological and economic security is a state of balanced development and protection of the socio-economic system from real and potential threats, and ecological and economic security can be understood as a state of balanced development and protection of the socio-economic subsystem of the region from real and potential threats that are formed under the influence of both anthropogenic and natural factors on the environment. Therefore, in practice, ecological and economic security can be considered as a state in which the surrounding natural environment can ensure the existence of society and the satisfaction of its needs in the long term, which is the main goal of socio-economic development. On the basis of ecological and economic security, it is necessary to form optimal development models that would maximally satisfy all the needs of society and guarantee the preservation of the natural environment for the existence of humanity in the future.

The ecological and economic system is inherently a dynamic system and its subsystems continuously interact and change. Equilibrium in this system is not a state of rest, but a state of moving balance during simultaneous opposite processes, for example, forest use and forest restoration, which preserves the integrity of the system and its important elements. This property organically follows the dynamic state of the ecological and economic system, during which there is a constant transition to a qualitatively new level.

Equilibrium in this case means maintaining a certain state of relations between the social, economic, and ecological components of the ecological and economic system. The quantitative measure of communication between subsystems in such a case can be defined as a condition of ecological and economic balance, which is formulated as follows: the magnitude of the impact on the environment should not exceed the limits of its capacity or elasticity [19].

Implementation of the concept of development of sustainable ecologically safe and balanced agricultural management requires a fundamental conceptual departure from the economic perspective of management, which has guided agricultural science for the past hundred years. An ecologically safe perspective of land use is characterized by the complexity of the factors included in the system, as well as the long-term nature of their analysis and control. In the system of environmentalization of agricultural management, the subject of value is the complexity of natural ecosystems, the traditional economic approach tries to simplify them.

Without the application of an ecosystem approach to agricultural management, long-term improvement in the effectiveness and efficiency of agricultural land use is impossible. Therefore, if the institutes of agrarian development cannot ensure the ecological sustainability of various farming methods, then they actually harm society, individual industries, households, and citizens [21].

Thus, economic security should be considered together with the ecological component of national security since they are inextricably linked. Based on this, it can be argued that the cause of the ecological crisis in Ukraine is primarily economic factors, namely:

- The structural change of the economy from the dominance of raw materials and resource-intensive industries;
- The extensive development of the agricultural industry,

which cannot provide the population with a sufficient number of environmentally friendly products;

- The lack of substantiation of economic development from the point of view of ecological processes of projects and plans developed by divisions of ministries on the basis of instructions and methods, regulatory and technical documentation for the placement, construction, and operation of economic facilities and complexes, for the creation of new equipment, technologies, and materials;
- The lack of effectively functioning administrative and economic mechanisms for environmental protection;
- The weak moral level of society and lack of ecological thinking of managers at different levels of management [15].

It should also be noted that a specific feature of environmental security is that in order to ensure the continuous development of the most important interests of man, society, or the environment, state bodies must, with the help of their management decisions, prevent and promptly eliminate threats and dangers that are a consequence of the functioning of natural, man-made and anthropogenic systemic factors.

Therefore, the national interests of society require such a level of state management of national security that it is guaranteed to ensure balance in the ecological system, as well as to guarantee the protection of the habitat of the country's population. The structure of such a natural environment is formed from the system of elements of the atmosphere, hydrosphere, lithosphere, and space, the species composition of the animal and plant world, and natural resources, which are interconnected, and whose preservation is the task of the state's environmental protection activities.

In general, the following levels of environmental safety are distinguished in scientific research:

I – natural – not directly changed by human economic activity (local nature “feels” only weak indirect effects from global anthropogenic changes);

II – balanced – the rate of restoration processes is higher than or equal to the rates of anthropogenic disturbances;

III – crisis – the speed of anthropogenic disturbances exceeds the rate of self-recovery of nature, but there is no radical change in natural systems yet;

IV – critical – restorative replacement of previous ecological systems under anthropogenic pressure with less productive ones (partial formation of deserts);

V – catastrophic – hard-to-restore replacement of previous ecological systems under anthropogenic pressure with less productive ones, consolidation of low-productivity ecosystems (formation of deserts);

VI – collapse – irreversible loss of biological productivity [27].

Thus, levels I-II of ecological security provide ideal conditions for the functioning, reproduction, and development of mankind, levels III-IV endanger the functioning, reproduction, and development of future generations, level V – current and future generations, VI - leads to the death of humanity (and other biological species). On the basis of this, approaches to the economic use of natural resources are formed and restrictions on them are established.

Therefore, it can be argued that a component of the ecological market economy is the wide application of market incentives and ecological-economic mechanisms in solving the problems of the natural environment, as well as the limitation of rigid administrative management or regulation. The implementation of such a model requires a review of the macroeconomic policy of the state in order to transform external environmental and economic factors related to the depletion of natural resources and

environmental pollution into internal production costs and their integration into the process of market pricing.

Based on this, it becomes possible to assess the level of dependence of environmental safety on part of the ecological goods produced (Figure 1).

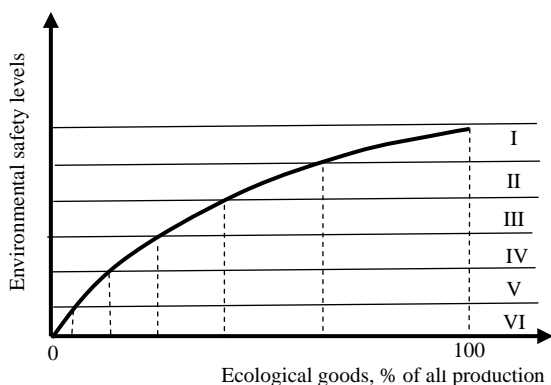


Figure 1 – Dependence of the level of environmental safety on a part of ecological goods
Source: [27].

As we can see from Fig. 1, in the long term, the dependence of the level of environmental safety on the part of ecological goods in the total volume of production is increasing. The dependence curve has a curved profile due to the fact that the components of the destructive impact on the environment are superimposed on each other, leading to an increase in the overall impact. This curve does not touch the limit of the first level of environmental safety, because even with 100% production of ecological goods, some negative impact on the environment will still be present. At the same time, the general curvature of the graph in Fig. 1 varies depending on production volumes. With their growth, the part of ecological goods that must be produced grows progressively.

In the short-term period, when the organizational and economic mechanisms of management of production and economic activity remain unchanged, the total costs and profits, which justify the transition from one level of environmental safety to another, can be schematically presented in the form of the following schedule (Figure 2).

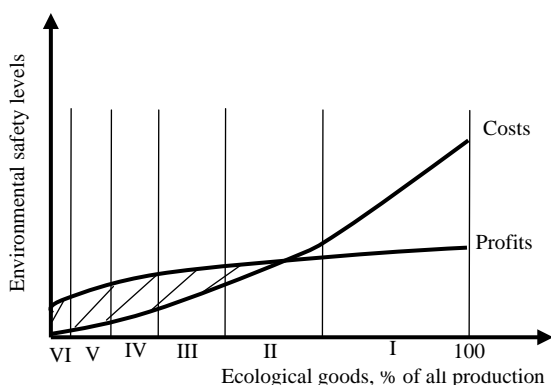


Figure 2 – Profits and costs associated with transitions between levels of environmental security
Source: [27].

The shaded area on Fig. 2 shows the area where profits exceed costs. The costs associated with the transition from one level of environmental safety to another are reasonable up to the point of intersection of the cost and profit curves. That is, the transition to the II level of the environmental safety is expedient.

The costs associated with the transition to the level I usually exceed the corresponding profits

Therefore, it can be argued that the change in the level of environmental safety requires the formation of the business portfolio of an economic entity based on ecological goods and ecological services, which to the greatest extent correspond to the interests of all market entities. This will allow you to avoid unnecessary expenses and also hope for a long life cycle of such an ecological product.

Therefore, in connection with the fact that one of the main directions of ensuring economic and environmental security is the implementation of appropriate policies and the general provision of this security within the framework of the comprehensive greening of social development and the implementation of environmental policy at the state level [15]. At the same time, the implementation of such a policy should take place according to the following principles of the formation of economic tools for ensuring environmental safety:

- The transformation of external environmental effects into internal ones;
- The integration of mandatory economic instruments with voluntary ones;
- The integration of economic instruments with other instruments;
- The priority of economic tools that ensure environmental safety;
- The ranking of economic instruments;
- The transformation of various economic instruments into instruments that ensure environmental safety.

5 Conclusion

Thus, it can be concluded that ecological and economic security is an important component of national security, which acts as a guarantor of national sovereignty, which ensures not only the stability and dynamic balance of the economy but also the physical and moral well-being of society. Therefore, in order to ensure the full realization of the tasks of ecological and economic security, it is not enough to consider the system "enterprise – environment – society", because regulatory influence is necessary, which could ensure the implementation and control of the functioning of this sphere.

In our opinion, the state should be the unconditional regulator of the processes taking place in the field of environmental and economic security. In connection with this, the object of further research should be the development of scientifically based proposals for improving the structure of the institutional mechanism for managing the development of ecological and economic security.

Accordingly, in order to achieve an effective mechanism for ensuring economic and ecological security, it is necessary to solve a wide range of environmental issues, including the stabilization of environmental pollution. In addition, attention should be directed to the improvement of natural resource management, support of international cooperation on environmental protection issues, and the development of environmental protection in the context of sustainable socio-economic development of Ukraine.

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