

ГЕТЬМАН О. Л.

канд. екон. наук,

с.н.с. відділу економіко-екологічних проблем приморських регіонів

Інститут проблем ринку та економіко-екологічних досліджень НАНУ

Французький бульвар, 29, м. Одеса, Україна, 65044

E-mail: helenagetman24@gmail.com

ORCID: 0000-0002-7404-3738

## ТЕОРЕТИЧНІ ОСНОВИ ЗАБЕЗПЕЧЕННЯ ФУНКЦІОНАЛЬНОЇ ТРАНСФОРМАЦІЇ СИСТЕМИ ЕКОЛОГІЧНОГО УПРАВЛІННЯ ЕКОНОМІКОЮ

**Актуальність.** Трансформація діючої системи екологічного управління та створення нових організаційно-економічних форм управління, набуває особливої актуальності на сучасному етапі розвитку цивілізації. Державна система екологічного управління перш за все реалізує цілі екологічної політики, враховуючи соціо-еколого-економічні інтереси суспільства та підтримуючи екологічну рівновагу на території країни. Імплементация в національне законодавство правил та директив екологічного законодавства ЄС, їх адаптація в екологічну політику у відповідності з внутрішніми екологічними реаліями є сучасними міжнародними вимогами ЄС та передбачає переорієнтацію господарювання економічних суб'єктів та пошуку нових форм та методів забезпечення функціонального управління процесами екологізації економіки країни.

**Мета та завдання.** Метою статті є теоретичний аналіз основних засад функціональної трансформації системи екологічного управління економікою та обґрунтування його пріоритетних напрямків розвитку.

**Результати.** Аналізуючи дослідження зарубіжних та вітчизняних вчених, дійшли висновку що трансформація системи екологічного управління є однією з вимог міжнародної системи стандартизації екологічного управління, що потребує його функціонального розширення і системного, методологічного поглиблення. Функціональна трансформація системи екологічного управління повинна дотримуватись міжнародних вимог і мати відповідні принципи гармонізації, ґрунтовної законодавчої бази та високу ефективність інструментів екологічного управління та контролю.

Обґрунтовано необхідність застосування процесу управління не як фрагментарного, стихійного процесу, а як системи цілеспрямованих, науково обґрунтованих механізмів упорядкування сукупності соціо-еколого-економічних відносин. При цьому основна роль в механізмах повинна належати економічним формам і методам "основного виробництва", адаптованих до процесу розвитку нових закономірностей і тенденцій.

Сам процес економічного управління передбачає об'єктивну необхідність прогнозу можливих наслідків впливу обраних механізмів регулювання на ресурсно-екологічну ситуацію, а наукова обґрунтованість повинна підтверджуватися ступенем досягнення цільових установок.

**Висновки.** Необхідність функціонального розширення екологічного управління та розробки науково-методологічного забезпечення екологічного управління економікою є основою забезпечення функціональної трансформації сучасної системи управління в Україні. Підходи щодо оцінки ефективності складових системи екологічного управління секторальною економікою, які забезпечать довгостроковий соціо-еколого-економічний розвиток країни становлять предмет і перспективи для подальших наукових досліджень в даному напрямку.

**Ключові слова:** екологічне управління, управління охороною навколишнього середовища, функціональна трансформація екологічного управління економікою, державна екологічна політика.

НЕТМАН О. Л.

PhD in Economics

Senior Scientific Researcher, Department of economic and environmental problems of seaside regions

Institute of market problems and economic & ecological researches of the National Academy of Sciences of Ukraine,

Frantsuzkyi boulevard, 29, Odessa, Ukraine, 65044

E-mail: helenagetman24@gmail.com

ORCID: 0000-0002-7404-3738

## THEORETICAL OF BASIS OF ENSURING FUNCTIONAL TRANSFORMATION SYSTEM OF ENVIRONMENTAL MANAGEMENT OF ECONOMY

**Topicality.** *The transformation of the existing system of environmental management and creation of new organizational and economic forms of management becomes of particular relevance at the present stage of the development of civilization. The state system of environmental management primarily implements the objectives of environmental policy, taking into account the socio-ecological and economic interests of society and maintaining the environmental balance on the territory of the country. Implementation in the national legislation of the rules and directives of the EU environmental legislation, their adaptation to environmental policy in accordance with internal environmental realities is a modern international requirements of the EU and involves a reorientation of organization of the economic actors and the search for new forms and methods for ensuring the functional management of the processes of ecologization of the country's economy.*

**Aim and tasks.** *The aim of the article is a theoretical analysis of the basic principles of functional transformation of the system of environmental management of economy and the substantiation of its priorities for the development.*

**Research results.** *Analyzing the research of foreign and domestic scientists, we came to the conclusion that the transformation of the environmental management system is one of the requirements of the international system of environmental management standardization, which requires its functional expansion and systemic, methodological deepening. The functional transformation of the environmental management system has to follow international requirements and have appropriate principles of harmonization, sound legislative framework and high efficiency of environmental management and control tools.*

*The necessity of using the process of management not as a fragmentary, spontaneous process, but as a system of purposeful, scientifically substantiated mechanisms of regularization the totality of socio-ecological and economic relations is substantiated. In this case, the main role in the mechanisms should belong to the economic forms and methods of "primary production", adapted to the process of development of new patterns and trends.*

*The very process of economic management provides for an objective need to forecast the possible consequences of the influence of the chosen regulatory mechanisms on the resource-environmental situation, and scientific substantiation must be confirmed by the degree of achievement of the targets.*

**Conclusion.** *The need for functional expansion of environmental management and the development of scientific and methodological support for environmental management of the economy is the basis for ensuring the functional transformation of the modern management system in Ukraine. Approaches to assess the effectiveness of the components of the system of environmental management of the sectoral economy that will ensure the long-term socio-ecological and economic development of the country constitute the subject and prospects for further research in this direction.*

**Key words:** *environmental management, environmental management society-nature relations, functional transformation of environmental management of economy, state environmental policy.*

**Problem statement and its connection with important scientific and practical tasks.** The historically long process of ignoring the significance of the environmental factor in economic development has led to modern environmental problems, cataclysms and catastrophes. The environment, its "quality" began to pose a threat not only to the economic development of humanity, but also to life on earth.

Recently, a whole series of new economic theories and concepts have emerged, based on radically new ideological approaches, on the idea of the interaction of economics and environment. In particular, the concepts of "economic development without economic growth", "the earth measurement of gross domestic product", the theory of sustainable development, etc. are very common.

The problem of forming a methodology for economic and environmental research, namely, their ideology, principles, goals and objectives is especially relevant. First of all, it is interesting to analyze the development of economic and environmental relations from the point of view of sustainable development.

**Analysis of recent publications on the problem.** The main issues of environmental management, socio-ecological and economic aspects of the system of economic management are displayed in the following publications of scientists such as: B. Burkinsky, E. Gromova, B. Danilishin, V. Shevchuk, S. Bogolyubova, S. Doroguntsov, E. Khlobystov, O. Veklich and others. Despite the theoretical studies of this problem, most scientific research is associated with the individual components of the environmental management system. Existing research is the basis for improving for functional transformation system of environmental management of economy.

**Allocation of previously unsolved parts of the general problem.** Management of ecologization of the economy is a set of processes that ensure the transformation of the problem into a new state by the application of certain controlled actions. When, within the existing control mechanism, the solution to the problem is slowed down, the process of forming a new management system is being implemented, and a new concept is created that takes into account institutional and economic changes.

**Formulation of research objectives (problem statement).** The goal of the article is to develop conceptual foundations for the establishment of a system for managing ecologically oriented sectoral development, in particular priority areas, the most sensitive to environmental transformations.

**An outline of the main results and their justification.** The patterns and trends in the development of economic and environmental relations are adequately reflected in various types and models of the development of economic systems. In the historical perspective, there are two types of economic development: technogenic or industrial and sustainable.

The technogenic type of development of society inherent in the 20th century is characterized as nature-intensive and nature-destroying, which has led to the emergence of sharp contradictions in the economic and environmental system.

There are a number of models of this type of development based on various theories and concepts. As the most generalized dialectical and historical models of economic systems, two should be distinguished, based on the concepts of “frontal economy” (first half of the 20th century) and “environmental protection” (late 60s - early 90s). Both of these concepts are based on an anthropocentric approach, i.e. on the idea that man is a master, a transformer of nature, and he dominates it, without being dependent on it. Such a pure ideology was inherent in the “frontal economy” model. The classical production function or the function of economic growth in economic theory was as follows:

$$\text{GDP} = f(x, y), \quad (1)$$

where GDP is gross domestic product;

x - labor;

y - technology

In the period of the frontal economy, natural resources and conditions were considered to be free and practically inexhaustible benefits. It was during this historical period that the industry began to develop rapidly, and a powerful technogenic basis has started to form.

The basic principle of the development of economic systems according to the “frontal economy” model was the maximum profit without taking into account the potential of the environment. The environmental management was meant mainly the use of useful properties of the environment for the production of wealth, economic benefits.

This period is characterized not only by the large-scale negative impact of the technogenic basis on the environment, but also by the idea of its fundamental transformation without taking into account further environmental consequences.

This model contradicted one of the two universal principles of the creation of the world theory – the law of conservation. The point of this law is that it is necessary to preserve “the main categories created at the beginning (the laws of nature, substance, energy, the most important types of organisms, etc.) in order to enable them to fulfill the purpose for which they were created” [1].

In this regard by the middle of the 20th century, technogenesis became the cause of the main contradiction in the development of society which consisted in the limited possibilities of the natural environment to meet its needs. Lack of natural resources, deterioration of the quality of the environment has become an obstacle to further social and economic development.

These realities are directly related to the vivid manifestation of the creation of the world theory laws (creation theory). Ignoring the law of conservation in relation to the environment has brought into effect the law of decline, i.e. – to creep, to disorder of the created universe, to entropy [2,3]. This manifested itself in environmental crises, catastrophes and cataclysms of the second half of the 20th century.

In search of a solution to the main contradiction, the society switched to a new development model based on the concept of “protecting the natural environment”. This concept is based, like the previous one, on an anthropocentric approach, which involves the implementation of environmental activities for further incessant social and economic development. The main thesis of this model of economic development can be formulated as further social and economic development, taking into account environmental constraints. Again, economic priorities dominated, the notion of “environmental management” was transformed, by which began to be implied the rational use, protection and reproduction of the natural environment.

During the period of domination of this model, administrative and legal and economic methods of environmental management were applied, mainly in the form of established regulations, environmental regulations and rules, as well as fines for their violation. However, their use was characterized by a more fragmented and command-and-control nature. As a result, this model didn't correspond to the actual elimination of contradictions between the economy and nature.

The current unfavorable environmental situation in Ukraine is a manifestation of the most negative signs of the technogenic type of development of the country's economy, in particular:

- fast and dwindling use of non-renewable types of natural resources, such as fuel and energy and other mineral resources, which affected the security of the state in its own resource base;
- over-exploitation of renewable resources (water, land, forest and other resources) in amounts exceeding the possibilities of their reproduction and restoration;
- deterioration of the quality characteristics of natural resources;
- excessive pollution of the environment due to significant negative anthropogenic impacts;
- a sharp deterioration in the demographic picture.

According to the forecasts of specialists, using modern technogenic basis in the economy of Ukraine without its fundamental reconstruction, the quality of the environment will not correspond to living conditions by the middle of the XXI century. In this regard, the problem of economic and environmental research is of particular importance.

At present, a qualitatively new type of relationship is being formed in the “economy - environment” system, due to the noospheric world view prevailing on a planetary scale, the transition to a sustainable type of social development. The definitions of the concept of sustainable type of development proceed not only from the anthropocentric approach, but also from the biocentric one, connected with the need to preserve the biosphere created by God as a natural and organic part of life and its development. In this regard, the main objective of this type of relationship is to preserve the normative state (quality) of the environment, ensuring the further social and economic progress of humanity and not posing a threat to the vital functions of present and future generations. This purpose of the development of society means a balance of economic and environmental interests and corresponds to one of the modern interpretations of environmental management, which refers to the use of useful properties and components of the natural environment to meet the economic, health, aesthetic, cultural needs of human.

In the modern conditions of transition to a sustainable development path, it is necessary to distinguish two main ideas:

- a systematic approach to economic and environmental research;
- problem-oriented, rational management of environmental management.

In fig. 1 is represented a scheme of the environmental management system.

In this system the subsystem “economy - environment” is singled out as an object of management, the structural components of which at the lower and higher hierarchical levels are in a complex dependence and subordination. The term “natural resource potential” should be understood as the amount of useful properties of the environment that a person can use without disrupting its ecological capacity. Any significant changes in individual natural objects (atmosphere, water objects, etc.) under the technogenic impact can lead to irreversible destruction of the natural resource potential in general. There are also closest intra-system direct and inverse relations between various types of economic activity and specific natural objects, resources, quantified by the scale of waste of the economy, the consumption of natural resources, the allocation of funds for solving environmental problems, etc., which exist at different levels of the hierarchy: macro - and micro levels.

As a subject of management, an institutional and organizational structure is presented, in which all components must also be hierarchically subordinated adequately to the object of management.

An integral and key component of the management process is the mechanism of influence of the subject of management on the object of management. And the immediate scope of this mechanism is intra-system connections or economic and environmental relations. In essence, the development of management mechanisms is a response to the degradation of economic and ecological systems.

One of the main concepts of the transition to sustainable development is the concept of “greening economic relations”. We have identified the following patterns of its implementation [4, 5]:

- the formation of the three-tier structure of the economy, i.e. the formation of the third sector in the development of the economic and ecological industry, the purpose of which is to protect and reproduce (recreate) the natural environment;
- greening the technogenic basis: the introduction of resource-substituting low- and non-waste technologies, the production of environmentally friendly products;
- greening of education for the spread of a new worldview among humanity;
- the inclusion of economic factors in the system of economic indicators at the macro and micro levels.

Environmental management should move to a qualitatively new level from limiting the impact on the environment to its rational transformation, rational adaptation of human activity to its peculiarities [6].

At the same time, the management process should not be seen as a fragmented, spontaneous process, but as a system of purposeful, scientifically based mechanisms for regulation the set of economic and

environmental relations. At the same time, the main role in the mechanisms should belong to economic forms and methods of “main production”, adapted to the process of development of new patterns and trends.

The process of economic management itself implies an objective need to forecast the possible consequences of the influence of the chosen regulatory mechanisms on the resource-environmental situation, and scientific validity must be confirmed by the degree of achievement of the targets.

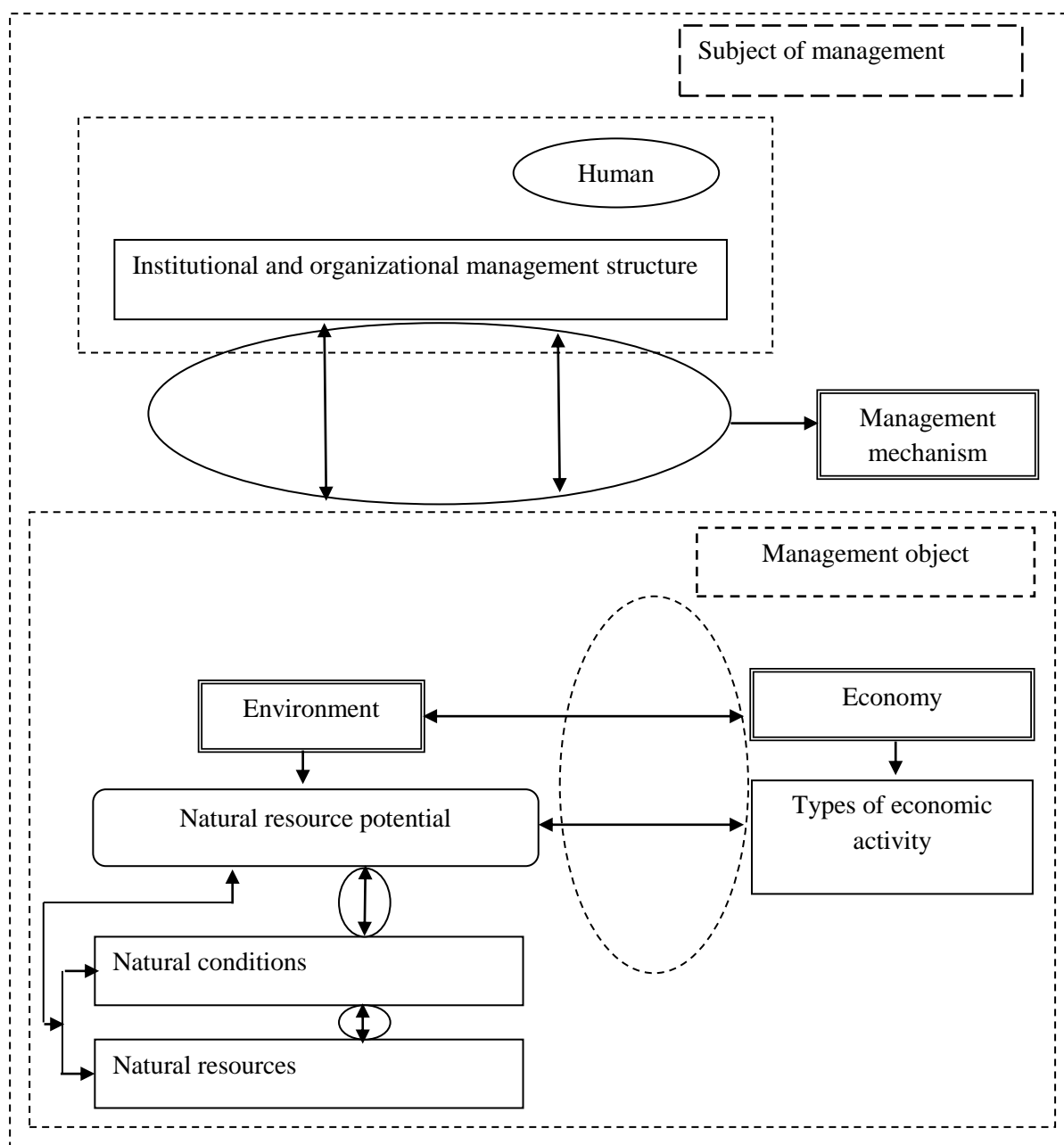


Fig. 1. The system of environmental management of the economy

Designation:



area of intra-system relations - area of operation of nature management mechanisms

Source: author's development

This is the idea of problem-oriented (rational) management. Therefore, the development of economic management mechanisms is one of the key tasks of economic and environmental research.

The initial theoretical propositions for the implementation of a radically new ideology are the reassessment of economic growth factors, i.e. of production function (formula 1).

Summarizing the various opinions of experts on this issue, the following factors of production should be highlighted, i.e. capital subgroups available to humanity:

- artificially created capital (fixed assets and current assets, i.e. material and financial resources);
- environmental (natural) capital (natural resource potential);
- social capital (human and social capital, including entrepreneurial abilities).

To ensure the sustainable development of society, it is necessary that the reproduction process ensure an expanded reproduction of all the listed capitals.

As an economic resource, the natural environment, its quality acquire use value.

In terms of the reproduction of the use value of the natural resource potential, i.e. reproduction (preservation) of its useful properties, the problem of qualitative and quantitative assessment of its environmental (economic) capacity in spatial and resource aspects becomes relevant. In our opinion among the many interpretations of “environmental capacity” the definition of this concept is the most representative as the ratio of the ability of a territory (natural object) to reproduce the main components of the natural environment with the technogenic expenditure of natural resources and the negative impact on the environment [7, 8]. Thus, the ecological capacity is measured by indicators of the maximum possible technogenic pressures on the environment and the maximum possible volumes of natural resource extraction for a specific territory, natural object, natural resource. Comparison of the environmental capacity with the actual technogenic pressures will allow assessing the degree of economic and environmental imbalance of economic development differentially for specific territorial and economic entities, identify disadvantaged areas and develop mechanisms to solve problems of optimizing resource use for the near and long term.

In order to preserve the consumer value of the natural resource potential, the following principles of environmental management have been developed:

- renewable resources should be used in at least simple reproduction mode, i.e. in a mode that is not paired with a decrease in their quantity and the possibility of biomass producing;
- the maximum deceleration in the rate of use of exhaustible resources in accordance with existing and forecasted for the near and long-term perspective projects, programs of alternative replacement of them with practically inexhaustible ones;
- reducing waste production due to the introduction of low-, waste-free and resource-saving technologies;
- pollution of the environment should not exceed its current level, and as the technogenic basis is greener, it should decrease.

To implement these principles in the realities of society it is required significant financial resources. In this regard, such a concept as the “environmental expenditures” of society in the context of reproduction, the preservation of the natural resource potential acquires the utmost importance. Environmental costs are components:

- budget expenditures at state and local levels;
- gross domestic product;
- incomes of business entities of all forms of ownership.

By “environmental costs” should be meant both “environmental expenses” (productive and necessary expenses of the society) and “environmental costs” (economic damage). These components of environmental expenditures are the fundamental basis for the transformation of criteria based assessment indicators of economic development at the macro and micro levels, and the development of economic development scenarios that are favorable from an economic and environmental point of view. However there hasn’t been yet a single theoretical and methodological approach to the determination of these indicators, as well as to the valuation of natural resources and national wealth, taking into account environmental capital. The problem of theoretical and methodological substantiation of one of the main mechanisms of environmental management – the system of payment for the use of natural resources and pollution of the environment, which is considered as a mechanism of stable financial support for the required environmental expenses is extremely relevant.

**Conclusions and perspectives of further research.** These economic and environmental problems are the subject of a study of such relatively new scientific areas as econology, economics and environmental management, economic environment. The development of these scientific directions can significantly affect the transformation of modern economic theory and will contribute to a rational, environmentally oriented management. The prospects for further scientific research in this area will be development of priority areas that are most susceptible to environmental transformation, implementation of strategies and mechanisms of strategic management that ensure long-term development of economic systems on the basis of environmental protection.

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