



Article

Conceptual Principles of Development of Regulatory Mechanism for Sustainable Development of the Ecological and Economic System of the Region

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Abstract: In this article, the conceptual principles of the development of regulatory mechanisms for the sustainable development of the ecological and economic system of the region, the principles of the concept of the development of mechanisms for the regulation of transitional regional ecological and economic processes, a set of mechanisms for the regulation of the processes of sustainable development of the ecological and economic system of the region, the budget for the development of the regional economy Methodological basis of effective regulation of incomes, the model of the combination of components of the regional ecological and economic processes regulation mechanism, the innovative model of sustainable development of the regional economy are presented.

Keywords: Public Administration, Regional Development, Innovation, Management, Efficiency, Sustainable Development

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1. Introduction

We emphasize the determination of the fact that the regional ecological and economic system is approaching or moving away from the bifurcation point and the loss or gain of the structural balance due to the increase or decrease of environmental and economic factors in the norms. The use of natural resources and intangible assets for each enterprise, as well as the safety margin of the regional economy based on these factors, that is, what percentage of convergence or divergence has occurred and how much remains before the critical state, depending on the time factor of the amount of types of natural resources and the number of enterprises in the regional economy functional relationships of the change can be determined numerically only on the basis of scientific reasoning.

These relationships will be specific for each region, which confirms the previously based conclusion that it is impossible to only average small environmental and economic factors and accept their static values for different regions. On the contrary, it is necessary to take into account the dynamics of environmental and economic factors in the formation of regional policy and develop development mechanisms, to monitor insignificant fluctuations in their values separately in the regional economy for each region.

2. Materials and Methods

The research on the topic "Conceptual principles of development of regulatory mechanisms for sustainable development of the ecological and economic system of the region" used deduction and induction methods, analyzing from the general to the specific and vice versa. Abstract-logical thinking helped to systematically study economic changes in the region. Structural change processes were analyzed in depth through observation, generalization, grouping and comparison methods. Synthesis and analysis methods were used to identify the causes and economic impact of changes. This methodology achieved clear and reliable research results. In this article, methods such as systematic analysis, statistical observation, statistical summation and grouping, induction and deduction, systematic and logical analysis, high quality and quantitative indicators evaluating the quality of service were used in the research process.

3. Results

Taking into account the goal of the research, which is to develop theoretical, methodological foundations and practical recommendations for the formation of new mechanisms for regulating the development of the regional economy, it can be noted that the proposed types of development of the regional system from the point of view of the need to achieve an absolute structural balance regulate the transitional processes of sustainable development of the economy should be the basis of a new concept of mechanism development (Fig. 1).

The defined set of principles related to the characteristics of the object of regulation and the actual means of management influence allows to develop the idea of developing mechanisms of regulation of regional transition processes of sustainable development, the purpose and task of the ecological and economic system of the region. Thus, the idea of developing mechanisms for regulating temporary regional processes is the penetration of the regulatory influence into their structural "atomic" micro-level and the control of the configuration of the elements of the structures of regional processes. The purpose of the development of mechanisms for regulating transition processes is to ensure a high level of management of the regional system, for example, during the transition between the development sectors of the ecological and economic system, during the period of loss of structural balance.

The relevance of these mechanisms is confirmed by the fact that the existing mechanisms are effective against a system that is expected to be in a completely balanced state with positive motion dynamics. At the moment, there are no mechanisms that allow the unpredictable transition regional processes to be realized in the future, characterized by the loss of the regional ecological-economic system of the structural equilibrium, controlled by at least the smallest random probability of the forecast.

Among the tasks that must be solved with the help of regional processes regulation mechanisms, among the tasks that arise in the ecological and economic system of the region during its sustainable development, a set of ecological and economic factors of the regional economy based on a reliable and timely flow of information, supporting the functioning of the structural model of regional processes as a set of connections -support and monitoring of changes in their parameters, as well as their integration into the existing territorial institutional sphere should be emphasized.

The results obtained with the help of these mechanisms, in turn, become the starting principles for the short-term and long-term ecological-economic structural balance in the development of such rules of conduct of private entrepreneurship, state and local authorities, which are carriers of ecological and economic relations. Therefore, the integrated mechanism of the balance of interests includes mechanisms to encourage the behavior of the participants of the regional economy within the necessary limits and in accordance with the given scenarios, to organize their effective cooperation with each

other, to manage the existing ecological potential of the designated region, and to control compliance with the rules.



Fig. 1 Principles of the concept of development of mechanisms for the regulation of transitional regional ecological-economic processes

By developing and implementing a set of separate mechanisms, each of which ensures the interaction and dynamics of the relevant elements of regional processes, the above tasks of the complex mechanism belonging to the class of regulation of regional processes are carried out in order to achieve the general goal of the system in accordance with the specified parameters and the specified efficiency criteria, to achieve a systematic and quantitative ecological-economic balance. can be increased.

In the regional system, it is planned to implement the routes of each individual region based on the mechanisms of grouping mechanisms, interregional equalization mechanisms, and development forecasting mechanisms based on the existence of structural balance of regions.

This allows to control the changes of several territorial units at the same time, to forecast the direction of development of the entire country based on the dream unit of the complex of regional directions, to achieve a general structural ecological and economic balance within the entire country, and the vector nature of these directions allows to prevent multi-sectoral risks. At the final stage, the complex of micro-mechanisms developed will be combined with macro-mechanisms and the existing regional institutional space through a set of special integration economic and legal instruments.

This allows to regulate the regional economy at the level of its elementary components, as well as managing large-scale systemic macro-processes in accordance with the principles of state regulation based on the above section.

We consider the information communication model of the components of the mechanism of regulation of ecological and economic processes of the region, in which the dynamics of the entire system connecting the components of the organizational structure, the means of ecological and economic regulation of the activities of economic entities, as well as the components related to environmental and economic informati

The dynamics of the whole system depends on the type of interconnection of the elements. That is, the dynamics and vector of the development of the ecological and economic system of the region are determined not only by the totality of changes occurring in its elements, but also by the nature of the relationship between them. In order to achieve a structural balance and ensure the direction of regional development of the "progress" type, the micromechanisms of the regulation of transition processes in the regional ecological-economic system are combined with the components of the state and macromechanisms at the international level. Thus, the law-making activity of the state in the field of the use of nature and the introduction of innovations is influenced by the policy of protecting the interests of the state before the relevant world community of international organizations that determine the strategic priorities of the modern development of social systems.

As shown in Figure 3, local self-government bodies are in contact with economic and environmental international organizations through state management bodies as subjects of regional structural ecological-economic balance regulation. In the external environment of the region, the processes of world economic globalization can be presented in the form of two main components: market mechanisms and protectionist policies of various countries.

Market mechanisms represent global economic trends resulting from the interaction of aggregate supply and demand for various groups of goods and services, which in turn include resource-intensive and knowledge-intensive products and services. The protectionist policy of the states allows artificial regulation of export-import operations and stimulation of national production, thereby influencing the above-mentioned market mechanisms.

Therefore, although economic globalization processes are related to a certain extent, at the same time, the activity of private business entities in the region is directly affected by market fluctuations and changes in the market situation, especially if this activity is based on the sale of natural resources and raw materials and is weak. It should be said that scientists are actively studying the connection between ecological and economic processes at the regional and global levels.

Global environmental changes of a natural and man-made nature cause a flow of information of an ecological and economic nature, because positive and negative environmental changes not only affect the regional ecosystem, but also have significant consequences for conducting business. In particular, in areas affected by natural disasters,

businesses lose their efficiency and competitiveness, which automatically affects the market for products and services, securities, labor, and more. It should be noted that the more resource-intensive the products or services of enterprises are, the more they depend on environmental changes. In turn, information about this is necessary for local self-government bodies to implement effective regulation of ecological and economic processes of the transition period.

Therefore, in the proposed model, private business in the region, local self-governing bodies are interconnected with the components of global environmental processes (Figure 3). In the context of the global concept of forming a knowledge-based innovation economy, the presence and intensity of information flows connecting the region with the world innovation market is of particular importance.

Local self-governing bodies need information on the environmental and economic level of existing innovations in the world to assess and monitor the average level of replacement of environmentally demanding products with science-intensive products, to justify this, to ensure regional structural balance, the activities of economic entities development of regulatory mechanisms, implementation policy of regional innovation and investment projects aimed at supporting regional natural potential is based on

These data are analytically processed in the structural balance monitoring department specially organized in the local self-governing bodies. Therefore, on the one hand, this department receives information from the international innovation market from the local government, which corresponds to its strategic goals and regional policy, and on the other hand, direct informational links are established with the technology transfer centers and organizations to obtain primary data.

It is highly likely that this two-way information flow will be interpreted in the most effective way in the future in terms of achieving a regional ecological and economic structural balance. In turn, private business can be a buyer of innovations from the international market, as well as a supplier of innovative products to this market. The interest of enterprises in establishing relations with the international market of innovations is stimulated by appropriate regulatory means of the internal regional environment.

Tax credit motivators, which provide a number of benefits for the introduction of innovative resource-saving technologies, are the main means of encouraging private entrepreneurship that combines the processes of using natural and intangible assets. This allows for a double effect in terms of achieving structural balance in the region, i.e. reducing the level of use of natural resources for the enterprise and, at the same time, increasing the rate of substitution of nature-intensive products by those who require science.

Based on the principles of structural ecological and economic balance, the basis of tax and credit instruments to stimulate the interest of enterprises in the implementation of business activities is the change of the philosophy of taxes as a social phenomenon. In the current environment, economic entities view taxes as an obstacle to increasing business profitability and personal well-being of the taxpayer. At the same time, in developed countries, based on the amount of taxes paid, bank loans, discount cards for the use of public services are allocated to enterprises and individuals, their competitiveness is assessed, ratings are made, etc.

That is, the tax becomes a means of giving a certain status to the economic entity in society, and therefore it is considered by him as a means of occupying leading positions in the economy. Thus, in the context of the regulation of regional transition ecological-economic processes, a similar image philosophy can be applied to regional economic agents, who have developed a system of services and statuses based on the level of resource use and exchange resource-intensive resources for science-intensive products.

I.Nujina emphasizes that it is necessary to determine the normative level of the interference of the economic system with the ecological system, on the basis of which the priority of the value approach in paying fines is replaced by the normative one when the

interference continues, when a clear limit is established and responsibility for its violation is established. There is also an opinion that it is necessary to integrate the economic and administrative methods of regulation based on the ineffectiveness of the current legal mechanisms for the prevention of environmental pollution, the introduction of a new paradigm of "ecological resource" management in the regional economy.

Thus, the regulatory tools include fines and administrative responsibility for exceeding the average natural resource use norms set by the structural balance monitoring department, taking into account the added value created at the same time. At the same time, the amount of fines should not be less than the average level of potential profit that can be obtained from the use of natural resources. Otherwise, there will be an interest in receiving that part of the profit that remains after paying all the fines.

At the same time, it is not always possible to implement measures to restore the natural resources spent to preserve the natural potential of the area at the expense of the received fines. Therefore, in some cases, it is appropriate to apply such regulatory measures that prevent the harmful interference of economic activity in the regional natural environment by informing business entities about the negative consequences that may occur in case of violation of established standards and regulations.

In order to timely control the economic processes taking place in the region and their impact on the environmental safety of the region, it is recommended to introduce a special report on the structural ecological and economic balance of enterprises, for this convenience, to and from the statistical office submitted to the relevant department. By observing the dynamics of each individual enterprise in relation to the state of structural balance, it is possible to determine with high accuracy the dynamics of development in relation to the bifurcation points of the entire regional ecological-economic system and the state of structural balance in various sectors. Studies show that activation of innovative activities of enterprises of Namangan region can be done with the help of the following tools:

- establishment of scientific banks; opening scientific services for enterprises; issuing scientific mortgages - bank loans secured by intangible assets for starting a business or modernizing existing production; introduction of scientific leasing; to strengthen the regulation on the mandatory establishment of scientific departments and branches in every enterprise in legal documents; obtaining financial autonomy by scientific institutions to carry out full-fledged relations with business.

Regional scientific banks can be specialized, that is, they can concentrate scientific developments related to certain sectors of the regional economy. The tasks of these banks include taking management of intangible assets and providing them to enterprises in the form of valid license agreements or scientific leases.

The regional scientific bank acts as an intermediary between the developers of innovative technologies and their recipients. Each operation related to the transfer of technology brings a certain percentage to the developer and a margin due to the bank for providing intermediary services. Scientific leasing, in contrast to the license agreement, provides for the possibility of the subsequent purchase of the innovative technology by the user or the direct long-term leasing right from the developer without the involvement of the bank and without payment (Romashchenko, 2024).

In the model of connecting the components of the mechanism of regulation of ecological and economic processes of the region (see Figure 3), it is assumed that the functions between economic and natural regional systems provided by local self-government bodies at the regional level will be implemented by the state.

4. Conclusion

One of the manifestations of these functions is the reasonable possibility of local authorities introducing a moratorium on the implementation of certain economic

operations, which, according to the structural balance monitoring department, the components of the regional system between social and economic relations pose a risk of disrupting the ecological and economic balance of relations (Jonsson, 2023). This function, as well as a number of other functions and rules, should be defined in a multilateral collective agreement between regional authorities, public organizations and enterprises. This is a mechanism for balancing the interests of economic entities in the economic and environmental spheres of the region.

The regional collective agreement should include the obligations of economic entities not to disturb the regional structural balance, and local government bodies should include provisions on supporting the innovative activities of resource-saving enterprises with the above incentives. Thus, on the basis of research on the influence of ecological and economic characteristics on regional development, it is possible to draw conclusions that the ecological system of the region determines the development direction and dynamics of the regional economy and is expressed in the conditional indicator of regional natural opportunities (Vasylevska-Smaglyuk, 2023).

In order to effectively regulate the complex ecological and economic system of the region in modern economic conditions, it is necessary to pay attention to regional transition processes. It represents certain changes related to the qualitative indicators of the ecological and economic environment of this region, not quantitatively. It is the situation of systemic ecological and economic imbalance that is the most unexpected and the most difficult activity of ensuring the management of the regional economy.

At the same time, due to constant changes in the regional structural balance, it is possible to move to a new stage of development of the ecological-economic system of the region (qualitative leaps). Based on the fact that the object of regulation of regional ecological-economic processes is ecological-economic factors, their small fluctuations lead to significant quantitative changes in the resulting indicators of the regional economy and changes in its development vector. Therefore, in the research, it is proposed to regulate regional ecological-economic processes on the basis of special micromechanisms, and their action is aimed at the internal elemental structure of the ecological-economic system of the regional economy.

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