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INVESTIGATION OF THE INSTITUTIONAL EQUILIBRIUM OF THE MARKET OF SOCIAL AND ENVIRONMENTAL SERVICES OF FOREST: CONDITIONS AND DEVELOPMENT STRATEGIES

Досліджено стан інституціональної рівноваги, як такий, що підвищує ефективність функціонування економічної системи. Визначено особливості інституційного середовища ринку соціально-екологічних послуг лісу, як еколого-економічної системи, економічні умови розвитку інституціонального середовища. Наведено стратегії досягнення стану інституціональної рівноваги.

Ключові слова: *інституціональне середовище, інституціональна рівновага, інституціональні транзакції, ринок соціально-екологічних послуг, стратегії розвитку.*

1. Introduction

The forest, as a unique natural resource, in addition to the material component (wood, non-waste products) generates a whole complex of intangible benefits of a generally natural (nature-protective, breed-forming functions) and social character (conditions for recovery, recreation, aesthetic and spiritual development). The social and ecological benefits of forests are defined as social and environmental benefits and play an important role in ensuring comfortable living and human activities.

Satisfaction of human needs in the social and ecological utility of forests is possible through the formation of a market for social and environmental services in the overall forestry system, which in turn necessitates the development of regulators and regulatory mechanisms for the economy of the forestry sector in the direction of institutionalizing such an economic system.

The main task of the institutionalization of social and economic relations in any branch of the economy is the establishment of certain rules of conduct and interaction between subjects of economic relations.

The result of the institutionalization process in the conditions of emergence of a socially oriented market economy in Ukraine can be the formation (development) of institutions that determine the rules and the nature of the interaction of economic and social agents in the process of the formation and functioning of the economic system, in particular the market of social and environmental services, as well as motivate, coordinate and monitor their implementation. Institutions of the economic system, providing institutional services that increase the level of certainty of the external environment, reduce the costs of searching and processing information, that is, reduce the costs of servicing the transfer of ownership of goods (transaction costs). By acting as a definite guarantor of the elimination or localization of commodity turnover risks, institutional services, in turn, have a cost, increases the overall cost of economic processes. Subjects of economic systems are interested in maximizing profits, including the reduction of

transaction costs. This motivates the demand for precisely those institutions that allow reducing such expenses, that is, cost-effective institutions. The institutional environment, in which the economic system is formed, when only a set of formal institutions is to be taken for this, can at the moment be considered favorable if the demand for institutions is satisfied by their proposal. Such state of the institutional market is defined as an institutional equilibrium. Given that the institutional environment, besides formal institutions, includes informal institutions, institutional equilibrium should be more fully understood not only in a certain correspondence between the supply and demand of formal institutions, but also to the extent that formal and informal rules of behavior of economic entities declared by formal and informal institutions are viable. It is the degree of correspondence between formal and informal institutions that determines the amount of expenditure to eliminate possible contradictions, that is, the possible dynamics of expenditure-related expenditures, and, accordingly, the effectiveness of the economic system.

A definite contribution to the general theory of institutional equilibrium can be studies of the institutional equilibrium of ecological and economic systems, in particular, the market of social and ecological forest services. The emergence of the market for social and environmental services of the forest as a new ecological and economic system of the forest sector of the economy of Ukraine takes place in a complex institutional environment that carries a number of contradictions between economic interests that are largely supported by existing formal institutions and social and environmental interests, on whose side the majority of informal institutions act. The depth of conflict between the formal and informal components of institutions determines the degree of institutional disequilibrium, increases the value of transaction costs and reduces the effectiveness of the functioning of the economic system. To a great extent, the difficulties in the formation of the market for social and ecological forest services are the absence of stable, understandable, more or less acceptable institutional and economic frameworks for all economic

and social actors. Such a situation makes it difficult to coordinate their actions and does not allow ensuring the effectiveness of the functioning of the economic system. The prospects for the formation of the market for social and environmental services for the forest, to a large extent, are determined by solving the problem of achieving institutional equilibrium as an important condition for a general economic equilibrium.

2. The object of research and its technological audit

The assertion that institutional constraints determine the capabilities of economic subjects and represent a combination of formal and informal institutions, to date, does not cause any doubt. It is also quite obvious that the effectiveness of the economic system, to a large extent, depends on the institutional equilibrium, in the classical market model is defined as the corresponding consistency of supply and demand. That is, the object of research is the state of institutional equilibrium of economic systems.

In the classic characteristics of the market, the economic category «equilibrium» is defined as the optimal balance between supply and demand. Institutions of the economic system generate the corresponding commodity – institutional services – serving the most important segment of market relations, such as the transfer (acquisition) of property rights to the goods that are the object of the market. Maintenance of the transfer of property rights requires certain costs (transaction costs), which can be significantly reduced by effective institutional support systems.

Demand for institutional services is determined by the usefulness of institutions, that is, the ability of institutions to minimize transaction costs, supply in the institutional market are formed depending on the cost of the process of formation (introduction) of an institution (institutional transactions). The most effective institutional condition for an economic system is the state of institutional equilibrium, which satisfies the interests of market participants at an acceptable level of costs for institutional services. The peculiarities of acquiring the state of institutional equilibrium by ecological and economic systems, in particular the market of social and ecological services of the forest, lies in the fact that in the institutional environment of such systems informal institutions – as rules, traditions, customs, from the distant historical times regulate relations between people and nature. Informal institutions can both motivate the processes of formalizing relations between market participants and provide them with some resistance. Therefore, for ecological and economic systems, the correspondence between the supply and demand of formal institutions is desirable, but not sufficient for institutional equilibrium. The state of institutional equilibrium of ecological and economic systems, to a greater extent, is formed with a certain balance of formal and informal rules of behavior of participants of the economic system.

3. The aim and objectives of research

The aim of research is identification and justification of the economic conditions and strategies for the development of the institutional support system for the market of social and ecological forest services to the state of institutional equilibrium.

To achieve this aim, the following tasks are formed:

1. To investigate possible institutional conditions of the market for social and ecological forest services.
2. To analyze the possible causes and factors that form a certain institutional environment of the economic system.
3. To determine the main directions of transformation of the institutional environment of the market of social and ecological forest services to the state of institutional equilibrium.
4. To determine the necessary economic conditions for development of the institutional environment in the state of institutional equilibrium, to propose and substantiate strategies for the development of the institutional environment.

4. Research of existing solutions of the problem

The formation of a market for social and ecological forest services, as something new that can cause changes in the old foundations of the economy in the forest sector of the economy, causes considerable resistance to those who benefit from the old order. The attitude towards the forest resource, primarily in its social and environmental component, as a public free good, has become one of the reasons for the functioning of the illegal, shadow economy, which consciously, with benefit only for itself, and not for society as a whole, has established informal rules, informal institutions that approach the norm of behavior of a significant number of economic entities. The market of social and ecological forest services can effectively function for the benefit of the entire people only when selecting effective institutions (general rules of behavior) that can ensure the satisfaction of the needs of society, nature and economy in the social and ecological utility of the forest. The institutional system can give a certain economic effect in conditions of institutional equilibrium. The process of forming an economically effective institutional system is a process of constant changes, selection of institutions that can be adapted to a fast external environment, and is a real content of institutional equilibrium.

There is a significant amount of research to address the problem of the acquisition by the economic system of the state of institutional equilibrium.

Most scientists believe that institutional equilibrium is a state in which, according to the correlation of participants' strengths and a given set of contractual relations forming an economic exchange, not one of the players considers it profitable to spend resources on restructuring agreements [1].

Such definition allows to regard the institutional equilibrium as a dynamic state that can and should develop depending on the evolution of the interests of economic agents and in the course of a competitive struggle that allows displacing inefficient institutions.

At the same time, it is argued that in history there are many examples of long (including age-related) economic stagnation due to imperfect institutions [2].

That is, institutional changes may meet a certain resistance due to the reluctance of economic participants to assume additional transformation costs accompanying such changes, or the unwillingness of some of them to lose the partial personal advantages that this institutional situation gives them.

In the works of the American scientist it is determined that the evolutionary approach to institutional changes is more acceptable to informal institutions. The development of formal institutions and mechanisms for their consolidation, to a large extent, occurs through state intervention [3].

In research, institutional changes are defined as institutional transactions, representing the necessary actions aimed at the formation of a new institutional framework [4].

It is argued that the basic level of the institutional system is informal institutions, which, in most cases, are exogenous. At the same time, the demand of economic entities can be content with formal institutions, the introduction of which can cause changes in informal institutions [5].

The result of institutional changes is the acquisition by the economic system of the state of institutional equilibrium. These institutional changes, in most situations cause significant resistance, this leads to the fact that such process can't be blown instantly. Institutional transactions, as a rule, take place discretely, under the conditions of entry of certain economic and social conditions [6].

Resistance to institutional changes can be from both informal and formal institutions that in each case significantly increases the cost of institutional changes and slows down the process [7].

It is determined that the institutional market can acquire institutional equilibrium states only when the demand for institutional services is equal to the value of their proposals [8].

But it is also known that in many scientific studies concerning the institutional economy and institutional equilibrium, it is determined that the institutional equilibrium, as the correspondence of supply and demand to institutions, can be applied only for formal institutions, a formal institutional environment. In a real situation, a significant part of the actions of economic agents is determined by informal rules, informal institutions that often exist, or arise independently of the formal environment and, in many cases, motivate the development of the entire institutional system. This gives grounds to determine that institutional equilibrium is a state where the market of formal institutions is in equilibrium and there are no significant contradictions between formal and informal institutions [9].

According to the research of the famous American sociologist, much of the conflicts that arise between economic agents at the conclusion of commercial contracts related to the lack of a single, clear and certain way that meets most of the subjects of the action of the algorithm when transferring ownership of the goods. Some participants of the economic system is considered more appropriate to solve conflicts in private, without resorting to formal procedures and even more so to spend resources to improve these procedures [10].

The process of formation and development of the system of institutional provision of the market for social and environmental services of the forest to the state of institutional equilibrium as a new ecological and economic system for the forestry sector of Ukraine has certain peculiarities that consist in considerable resistance to informal institutions of the process of capitalizing social and ecological benefits of the forest, still, free goods and deep-rooted old post-Soviet rules and regulations (formal institutions) regulation of economic processes. It determines the need and relevance

of the research problems of the institutional balance of ecological and economic systems, in particular the market of social and environmental services of the forest.

In the sense of institutional equilibrium, as the absence of contradictions between informal and formal rules of action, there may be several states of institutional disequilibrium that require certain strategies for development of the institutional environment before the entry of its state of institutional equilibrium.

The most typical situation of institutional disequilibrium in the market of social and ecological forest services is that when the introduction of new formal institutions, that is, the development of the state of the institutional environment in the position of institutional equilibrium, is met with strong opposition from the informal (the situation of resistance to development by informal institutions C_{ORNF}). The establishment of informal norms of behavior in relation to forests in the society, mainly this concerns the fact that in the minds of a significant part of the community there is a certainty that the social and ecological benefits of the forest are free gifts of nature and the introduction of certain formal frameworks, including the capitalization of the social and environmental benefits of the forest, by becoming, can lead to a certain economic imbalance, when some will pay for such goods, and others use such goods for free. With a considerable depth of such contradictions, it is impossible to achieve institutional balance by revolutionary introduction of formal rules by the state. The strategy of achieving institutional equilibrium in such situation should be based on the principle of evolutionary adaptation of formal institutions to existing informal constraints. An important economic argument for transition of informal restrictions is that with the introduction of formal norms, economic agents can benefit greatly by reducing transaction costs (ΔTC) than costs associated with the introduction and use of formal rules. Economic agents who are interested in an institution should pay certain funds for the formation of this institution (for the proposal of this institution by state authorities or sectoral government bodies) (C_f), and be willing to pay for the use of this institution (training, reporting for use of institute, etc.) (C_p). That is, the total price of the development or establishment of a new institution (P) can be:

$$P = C_f + C_p. \quad (1)$$

An economically justified condition for such process are:

$$\Delta TB \geq P. \quad (2)$$

Another situation (the situation of resistance of development by formal institutions (C_{ORF}) of institutional disequilibrium) can be generated by the fact that formal institutions do not change when informal institutions change. For the social and ecological component of forest resources this is the most characteristic situation of the present. A significant deformation of society's needs for environmental benefits of forestry requires the modification of many laws in terms of political and legal support for the concept of sustainable nature management. At the same time, the lack of understanding by the business of the prospects for capitalization of social and environmental benefits, and in most cases, the fear of the risks of such new innovation breakthrough in the forestry economy is

the reason for political lobbying for the introduction of new norms in the forest sector of the economy at the state level. Negative consequences of the situation when there is no political will for the transformation of institutions to establish an institutional balance is the emergence of informal institutions at the contractual level. Shadow informal institutions can meet demand in regulators of contractual processes while capitalizing social and environmental services, but will lead to a reduction in the tax base, due to the emergence of the shadow economy.

The institutional balance in this situation can be defined as:

$$D_{ORF} = S_{IF} + S_{INT}, \quad (3)$$

where $D_{i,ORF}$ – demand for institutions in a situation of resistance to the development of formal institutions; S_{IF} – proposals of formal institutions; S_{INT} – proposals for informal shadow institutions.

The economic effectiveness of such institutional equilibrium can be defined as:

$$E_{C_{ORF}} = \Delta TC_{IF} + (\Delta TC_{INT} - P_Z), \quad (4)$$

where ΔTB_{IF} – the magnitude of transaction costs savings through the use of services of the formal sector of the institutional environment; ΔTC_{INT} – the magnitude of savings in transaction costs through the use of informal sector services of the institutional environment; P_Z – the price of the risk of penalties.

The strategy of putting such situation on the level of institutional equilibrium in introduction effective coordination institutions in the institutional environment that should form an environment where the benefits from informal institutions will be less than the magnitude of possible penalties, that is, the economically justified condition for development are:

$$P_Z \geq \Delta TB_{INT}. \quad (5)$$

For such economic systems as the market of social and ecological forest services that are only being formed in the forestry sector of Ukraine's economy, this kind of institutional disequilibrium is to a large extent characteristic, when the acquisition of institutional equilibrium occurs through the adequate development of formal and informal institutions (the situation of adequate development of formal and informal institutions (C_{ARFNF})). Economic agents are interested in making informal rules that have proved effective in regulating. The economic condition for the implementation of such process is the comparison of the economic benefits of such transformation (EB_{FFI}) and the costs of providing formal rules to informal rules (institutional transactions or the costs of forming formal institutions (TC_{FFI})). That is, the economically necessary condition for this process are:

$$EB_{FFI} \geq TC_{FFI}. \quad (6)$$

The strategy for implementation of such process is change of the perception of the relative benefits and costs of such institutional transactions (the choice of economically viable alternatives) by the economic and social agents of the market for social-ecological forest

services. Such changes require a certain amount of time and, as a rule, is a reaction to such negative phenomenon as the deterioration of the stability or security of contract activities due to the inadequacy of formal coordinating institutions.

In the long term, with the implementation of the conceptual foundations for the establishment and functioning of the market for social and environmental forest services, a state is possible where formal institutional equilibrium has been established between formal and informal institutions, that is, for some time, formal and informal institutions do not change (the situation of institutional equilibrium, institutional balance (C_{IB})). The economic condition of this provision is that institutional transactions will require more costs than the benefits that can receive economic agents from the institutions of national development, that is:

$$TC_{FFI} \geq EB_{FFI}. \quad (7)$$

It should be understood that such situation of institutional equilibrium in a transitory environment is hypothetical, but it is possible that the realities of such situation require a stabilization strategy that consists in mutual compromises in resolving issues when concluding and implementing contracts.

5. Methods of research

The study of possible institutional conditions of the market of social and ecological services of forests is carried out using the following methods:

Retrospective – the historical traditions of people's attitude to the forest as a natural resource (informal institutions).

Generalization – the prospects of the ecologization of existing forestry institutions (formal institutions).

Comparisons – the possibilities of using the experience of capitalization of social and ecological benefits of forests in the leading countries of the European Union were explored.

The study of the economic conditions of development of institutions is conducted using the following methods:

Economic analysis – comparison of economic benefits and economic losses when finding an economic system in a particular institutional state.

Forecasting – a study of possible losses for implementation of institutional transactions.

The choice of possible strategies for achieving institutional equilibrium is carried out using the following methods:

SWOT analysis – study of the possibilities of the external environment for the generation of institutions.

Marketing analysis – research of processes of demand formation for institutes.

Comparison – the choice of alternative strategies.

6. Research results

The conducted researches determine and substantiate the organizational and economic conditions of possible conditions of the institutional environment of the market of social and ecological forest services. The initial data for determining the current state of the institutional environment

is the level of conformity of formal constraints and informal principles of interaction between the subjects of the market for social and ecological forest services (organizational conditions). The economic situation of the conditions of the institutional environment of the economic system is determined by the value of transaction costs (TC), which are estimated through the cost of the processes of servicing turnover (economic conditions).

Research results make it possible to identify the main factors that form the economic conditions for development of the institutional environment in the state of institutional equilibrium, such as: the dynamics of transaction costs (ΔTB), the cost of formation of new formal institutions (P), the magnitude of possible penalties (P_z), and the economic benefits of using formal institutions (EB_{FFI}) and others. It is these factors, the level of their influence on the institutional environment and the possible dynamics of development that are the initial data for the choice of the strategy of economic participants' actions regarding the acquisition of the state of institutional equilibrium (Fig. 1).

The generalization of research results allows the initiators of innovative changes in the structure of the forestry sector of the Ukrainian economy – the capitalization of the social and environmental benefits of the forest – to gain confidence that, despite the resistance of those who benefit from the old foundations of forest management and the uncertainty about the success of those who benefit from new orders, There are scientifically sound economic conditions and strategies of actions that are led by institutions of the market of social and environmental services of the forest to the state of institutional equilibrium, as an important factor, effectively functioning of the new ecological and economic system.

7. SWOT analysis of research results

Strengths. The achievement of the state of institutional equilibrium, according to economic conditions and strategies of actions determined in studies will allow to reduce transaction costs (reduce the cost of service processes of turnover) and, accordingly, increase the overall efficiency of the economic system.

Weaknesses. The cost of institutional transactions (the costs of the formation and functioning of new formal institutions) that are capable of ensuring the state of institutional equilibrium can exceed the economic effect that such institutions can generate.

Opportunities. The prospects for creating effective regulators for the functioning of the market for social and ecological forest services, which will reduce risks and attract significant investments in the processes of capitalization of social and ecological resources of the forest.

Threats. Negatives can bear a disproportion of payments for the consumption of social and environmental services of the forest some will have to pay them according to established rules, while others use it for free. That it is impossible to provide such services purposefully.

8. Conclusions

1. Possible states of institutional disequilibrium as a level of contradictions between formal and informal institutions of the institutional support system for the market of social and ecological forest services as a new ecological and economic system of the forest sector of the Ukrainian economy are identified and substantiated.

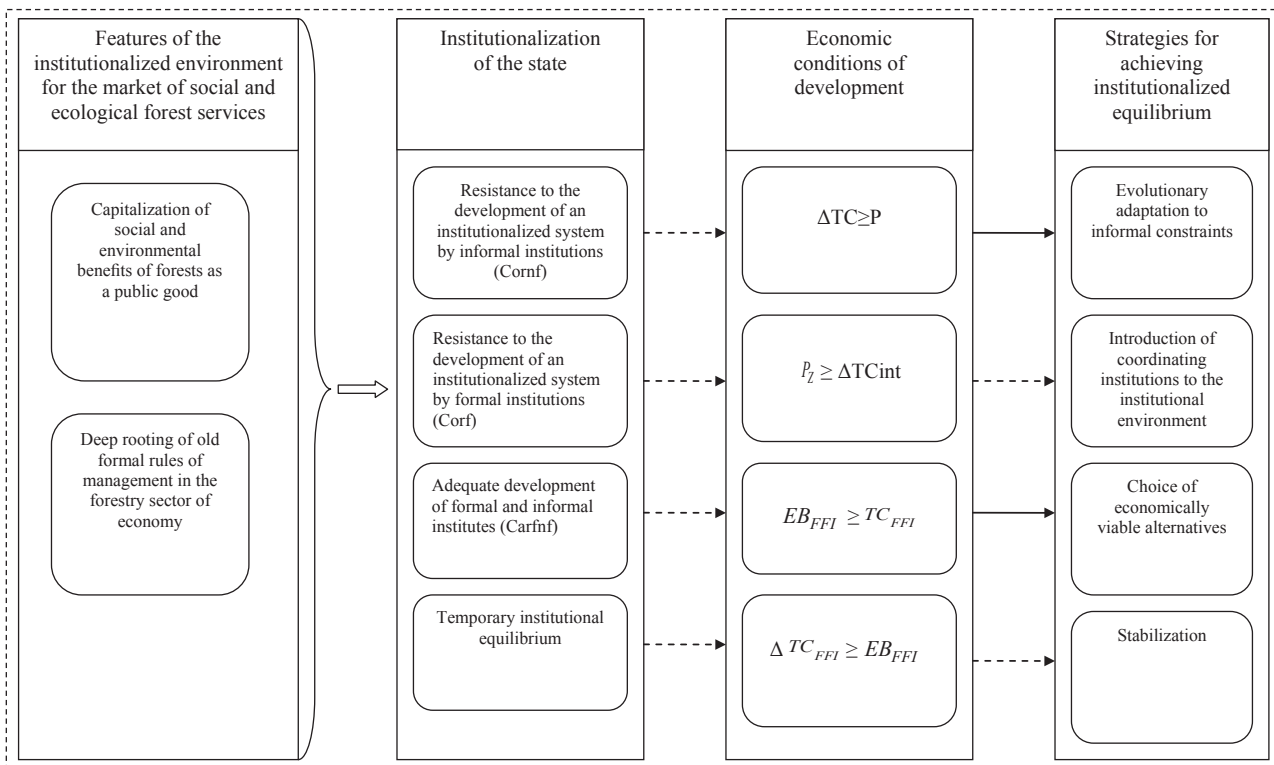


Fig. 1. Peculiarities of the institutional environment, possible institutional conditions of the market for social and ecological forest services, economic conditions and strategies for achieving institutional equilibrium

2. The main factors that shape the institutional environment of the ecological and economic system and their impact on the institutional environment and the dynamics of its development to the state of institutional equilibrium are given.

3. Economic conditions that determine the possibilities of transforming the institutional environment of the market of social-ecological forest services to the state of institutional equilibrium are revealed.

4. Strategies for the behavior of the subjects of the ecological and economic system on the formation of economic conditions for achieving the institutional equilibrium of the market for social and ecological forest services are proposed.

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ИССЛЕДОВАНИЕ ИНСТИТУЦИОНАЛЬНОГО РАВНОВЕСИЯ РЫНКА СОЦИАЛЬНО-ЭКОЛОГИЧЕСКИХ УСЛУГ ЛЕСА: УСЛОВИЯ И СТРАТЕГИИ РАЗВИТИЯ

Исследовано состояние институционального равновесия, как таковой, что повышает эффективность функционирования экономической системы. Определены особенности институциональной среды рынка социально-экологических услуг леса, как эколого-экономической системы, экономические условия развития институциональной среды. Приведены стратегии достижения состояния институционального равновесия.

Ключевые слова: институциональная среда, институциональное равновесие, институциональные транзакции, рынок социально-экологических услуг, стратегии развития.

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SELECTION OF A SET OF INDICATORS OF ESTIMATION OF SOCIAL AND ECONOMIC SYSTEMS OF REGIONAL TYPE

Розглянуто формування наборів показників, що характеризують складні соціально-економічні системи (СЕС) регіонального типу, для вирішення завдання багатофакторного оцінювання. Запропоновано враховувати чинники природно-кліматичного характеру. Розроблено основи методології оцінювання СЕС на основі використання індексів, отриманих в результаті нормування показників, застосування інтегральних згорток, типологізації і ранжирування. Проаналізовано індекси на основі лінійних і квадратичних процедур усереднення. Результати досліджень застосовуються в системах моніторингу та підтримки прийняття рішень.

Ключові слова: рівень інвестиційної привабливості, рівень сталості розвитку, багатофакторне управління, процедури усереднення, нормування показників.

1. Introduction

Among a number of complex systems, socio-economic systems (SES) occupy a special place, which are divided into SES of different levels and types. The most complex, the most global SES is modern civilization.

The more elementary considered SESs consist mainly of three main elements-subsystems: social groups, economic processes and the environment. A social group is primarily an individual and a person. Under the environment is understood the ecological, geographic, natural and climatic environment and metasystem environment. The specific