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IDENTIFICATION AND GROUPING OF THREATS AND RISKS TO SUSTAINABLE MANAGEMENT

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The relevance of this study is to solve the basic task for society to ensure sustainable management by improving the spatial management system of natural resource assets, increase their usage efficiency and ensure sustainable socio-economic development of Ukraine on this basis. At all levels of the state government, there appeared a need to ensure spatial management and transform the organizational structure of natural resource management on the basis of the introduction of a modern system of territorial natural entities with the change of relevant functions, mechanisms and powers in the direction of increasing the ecological and economic effect in various spheres of economic activity. Aim of the research: identification of the highest priority, to ensure sustainable management in resource constraints, the composition of threats and risks and their grouping; development of a closed scheme of permanent clarification of the most important, for spatial sustainable development, threats and risks. The methodological basis of the study is the work of domestic and foreign scientists on spatial management of natural resources, sustainable spatial development and economic security, regulations, analytical and statistical materials of ministries and departments, international organizations, other scientific and information materials. The study involves the use of a number of interrelated methods, including methods: analysis and synthesis; system analysis; economic and mathematical; expert assessments; graphic, etc.

The scheme of grouping of organizational and economic mechanisms of realization of spatial model of management of sustainable management within a certain state formation is constructed. According to which a universal, for three stages of implementation of the corresponding type of macro- model (initiation, consolidation, incorporation) spatial management of sustainable development, algorithm is developed. The use of the latter involves: continuous grouping and identification of the most significant threats and risks (in a closed cycle of management, organizational and economic, forecasting, analytical and econometric procedures); development of measures to eliminate the consequences of turbulent shifts.

Keywords**:** *spatial management of sustainable management, risks and threats, transformation of economic relations.*
JEL classification: R 13, R 32, A13.

Introduction

The relevance of this study is to solve the basic task for society to ensure sustainable management by improving the spatial management system of natural resource assets, increase their usage efficiency and ensure sustainable socio-economic development of Ukraine on this basis. At all levels of the state government, there appeared a need to ensure spatial management and transform the organizational structure of natural resource management on the basis of the introduction of a modern system of territorial natural entities with the change of relevant functions, mechanisms and powers in the direction of increasing the ecological and economic effect in various spheres of economic activity. The deepening of the conceptual framework for improving the effectiveness of the spatial management system of natural assets also requires the development of an institutional environment, in the context of restructuring the ownership of natural resources, streamlining the powers of the executive authorities, identifying adequate forms of home keeping. Given the need to find a balance in the structure of natural resources management, the issue of grouping risks and threats to the processes of spatial management of natural resources of the state becomes urgent. In general, efforts should be directed towards ensuring strategic system-integrated management of the utilization of Ukraine's natural resource potential. This should first and foremost be ensure sustainable management as a result of the formation of an innovative model of state impact on the processes of modernization of the natural and economic sphere, aimed at shifting the center of gravity to superstructure components - managerial innovation; formation of diversified management systems based on the development of neo-industrial economy; ensuring sustainable development of the economy of the country in the conditions of achievement of financial and economic stability, developed rent relations and production of competitive products, formation of the updated in accordance with modern requirements quantitative characteristics of the estimation of the nature management efficiency.

The methodological basis of the study is the work of domestic and foreign scientists on physical economy, strategic potential, spatial management of natural resources, sustainable spatial development and economic security, regulations, analytical and statistical materials of ministries and departments, international organizations and other scientific and information materials. The study involves the use of a number of interrelated methods,

including methods: analysis and synthesis; system analysis; economic and mathematical; expert assessments; graphic, etc. Paying tribute to the theoretical and practical value of previous scientific achievements of Ukrainian economists (Igor Bystryakov, Petro Rogov, Mykhailo Khvesyk, Serhiy Shkarlet and others), there is an urgent need for a systematic study of the elimination and prevention of threats and risks to sustainable management. within socio-economic systems and territorial natural and economic entities.

Aim of the research: identification of the highest priority, to ensure sustainable management in resource constraints, the composition of threats and risks and their grouping; development of a closed scheme of permanent clarification of the most important, for spatial sustainable development, threats and risks.

Results and discussions

Depending on the degree of respect for the diversity of nature in the theory of sustainable development, there are two schools of scientific thought – "strong" and "weak" sustainability. In the face of strong constancy, natural capital cannot be replaced by human-created capital – that is, artificial capital. Therefore, the first should be no lower than the critical level beyond which it cannot recover. Weak constancy allows to substitute the natural resource capital for the artificial one, because, according to the supporters of this approach, scientific and technological progress permits to create factors of production as complete and generalized substitutes for natural capital and, consequently, to ensure sustainable management.

At the same time, using the provisions of the theories of weak and strong sustainability, existing approaches to understanding sustainable management through the rationalization of spatial management of natural resource assets can be classified as reformist or transformation. Obviously, according to the above, more approaches can be distinguished, but having an aim to identify conceptual differences between the existing ones, only two of the specified approaches were considered in the paper.

The reformist approach encompasses actions to achieve sustainable development within a certain socio-economic system which exists, constantly changes, and therefore requires its moderate reformation. According to the transformational approach, the problems lie in the fundamental properties of modern society and the outdated system of spatial management. Therefore, urgent transformations are needed within the national socio-economic system, taking into account the increasing the different nature of threats and risks to sustainable development. Reformists view economic growth as a way of solving the problems that may arise in the process of achieving sustainable development, because consumer potential is able to increase the global GDP. Transformers, on the other hand, also assume an increase in the consumer needs of the poor, but that should occur due to rationalization of division-redistribution rather than growth. Consumption should be based on criteria of sufficiency. In addition, it should be acknowledged that the provisions of these theoretical and conceptual approaches differ in nature, although both are aimed at ensuring the welfare of mankind and reducing the level of risks: reformist – more anthropocentric, and transformational – eccentric.

Therefore, the author proposes to take measures in the field of sustainable management by increasing the efficiency of management of modern spatial natural resources and natural economic entities, primarily with the simultaneous application of the principles of environmental and economic security. So, in particular, when considering simple systems (for instance, an enterprise as a production and economic system, or forests as ecosystems, etc.), the authors suppose it appropriate to take into account their level of safety (besides the main indicators and, at the same time, the level of economic and environmental safety due to the fact that at present, scientific and technical human activity (labor) causes the transformation of simple systems into more complex entities. And, today, it's hard to talk simply about ecosystems. Nowadays, the vast majority of ecosystems are either man-made or man-controlled (meaning forests, fields, meadows, etc.). Practically, there are no longer sections of areas that are not involved in production and economic activity by humans – so, now, we are already dealing with created on the territory of the state socio-ecological and economic systems (SEES) [1, p.76-79], which should be distinguished by the types of territorial spatial-economic formations (of binary and large-scale invariant orientation).

Based on the definitions of the essence and content of ecological and economic security in its study, there might be two methodological approaches (research: of the ecological and economic security according to the analysis results of the level of load on SEES, and hence, on the development of spatial natural and economic entities; of parameters of sustainability and the balance in functioning the natural-economic formation by the results of evaluation and systems analysis of its indicators). Herewith, ecological and economic security implies the achievement of the maximum productivity of the system, of the minimum disturbance of its equilibrium (quantitative measure of communication between subsystems) under various external influences, increase of resistance to these influences and preservation of ability to self-regeneration. That is, achieving equilibrium interaction between society, production and the natural environment; harmonization of their relations on the

basis of observance of laws of development of the biosphere. Ecological and economic security should ensure such internal interaction of elements of the spatial system, at which the high rates of expanded reconstitution of production, economic growth and increase of people's well-being are accompanied by the preservation, continuous improvement and development of both individual spheres and the whole environment.

In reality, solving the task- to ensure a sufficient level of environmental and economic security involves- an organic consideration of the progressive and goal-oriented socio-economic development of society with its activities to preserve and improve the natural environment. That is, not a rejection of economic growth, but its systematic implementation is not in contradiction, but in complete harmony with the environmental regularities of the development of the surrounding nature, and the social regularities of the development of society.

Ecological and economic security is a "reasonable" balance between the maintainance of a favorable ecological environment and the pace of economic development, in the result of which sustainable social progress is ensured. This is possible only under the following conditions: a) an accumulation (restoration) of ecological potential will be occurring, in comparison with the rate of economic potential build-up; b) the speed of anthropogenic action will not exceed the rate of adaptation to external and internal conditions of the general systems. Hence, preservation of these principles will ensure the continuity and practically the limitlessness of economic growth in the current conditions of scientific and technological progress. From this, there will note, a sufficient level of ecological and economic security of spatial natural-economic entities is achieved only when there is warranty, sustainable and long-term development, and at the same time, several key criteria (economic, environmental and social-hygiene) are taken into account. Herewith, as it is known [2, p.544-556; 3], the state of ecological and economic security is determined by analyzing the values of the system of indicators of ecological and economic security (the system of indicators by which we will characterize the state of spatial natural-economic entities: the quantitative information showing the change over time).

We recognize that the need for security is one of the most important basic needs of mankind, especially in the field of natural resource management in the context of sustainable management in the state and its regions. And, accordingly, in the provisions of Article 3 of the Constitution of Ukraine it is indicated: "A person, his life and health, honor and dignity, integrity and security are determined in Ukraine as the highest social values" [4, p.4]. Despite the fact that security is not anything objective (material), it is a kind of characteristic and a prerequisite for the vitality and viability of real-world objects. Therefore, it is a very specific category, the main purpose of which is to protect and promote the vital interests of a person, society and the state. [5, p.6].

Conditionally, security for both national socio-economic system in general and for spatial natural-economic entities in their limits can be divided into the following two types: a) absolute security: the hypothetical absence of danger, that is, of the possibility of any upheavals, cataclysm, threats to an individual, society or the state as a whole; b) relative safety: real protection against danger, ability to resist it safely in case of occurrence (the possibility of occurrence of danger is not excluded).

Since, by security we have to understand such state of the subject, which means that the probability of undesirable change of any qualities of the subject, the parameters of his own property and his environment is small (less than a certain threshold limit) [6, p.44]. That is, the nature destructive (in national and international scales) character of modern scientific and technological progress and economy that has led to serious, sometimes irreversible, disturbances of natural systems and processes must take into account the risk hazard assessment of environmental problems for the development of spatial natural-economic entities. After all, the impact of these problems and the spatial development and going beyond the national framework give them a transboundary and broad international character of threatening actions and significantly reduce the level of national security. Therefore, environmental risks and threats, taking into account their magnitude and importance, make consider the environmental security at the level with economic as one of the components of the national security [7, p.7].

In modern economic theory, there are usually two approaches to the research and study of ecological and economic security, which are developed and taken into account. Some of the developers, in general, reject the need to allocate economic and environmental security in a particular area of research in the context of streamlining the spatial management system in order to achieve sustainable management, but interpret them as a common subspecies in the national security system [2, p.121-123]. In this context, economic and environmental destructive factors are considered only in their extremely negative manifestation while the economic and environmental base of society is being destroyed. Hence there appear the attempts to give the activity as to the simultaneous provision of economic and environmental security a narrowly instrumental service role, rather than a role of spatial significance - to prevent the transition of security parameters beyond the limit values (development of levels: of anthropogenic load, indicators, etc.). The author acknowledges that generalizations of scientific views

and results of developments have allowed us to build a closed block diagram of the risk management process within the spatial natural-economic entities (Fig.1) at five stages of its implementation with permanent clarification of the most important, at a certain stage of dynamic system development.

It should be emphasized that we can identify a set of risks and threats that are relevant and typical today, at the same time, for the functioning and development of all natural and economic systems in Ukraine. So, in particular, it is: – the decline in production and the destruction of the real economy, which occurred in retrospect; – structural and technological imbalance of the economy; c) interregional disparities in economic development; – illegal export of capital, raw materials, materials and products outside Ukraine; – excessively high level of income differentiation and as a result of lower living standards; – lack of socially oriented market economy; – poor health of the population due to lower living standards; – inefficient use of natural resource potential; – use of worn-out funds and use of environmentally harmful technologies; – lack of environmental regulations; – low wages and, as a consequence, lack of motivation to work; – man-made congestion of the territory; – pollution of the environment and placement of chemically hazardous substances on the territory of Ukraine; – the dominance of mining and basic industries with a low degree of processing of raw materials; c) non-rationality and inefficiency of spatial management of the strategic potential of the state and its regions, etc.

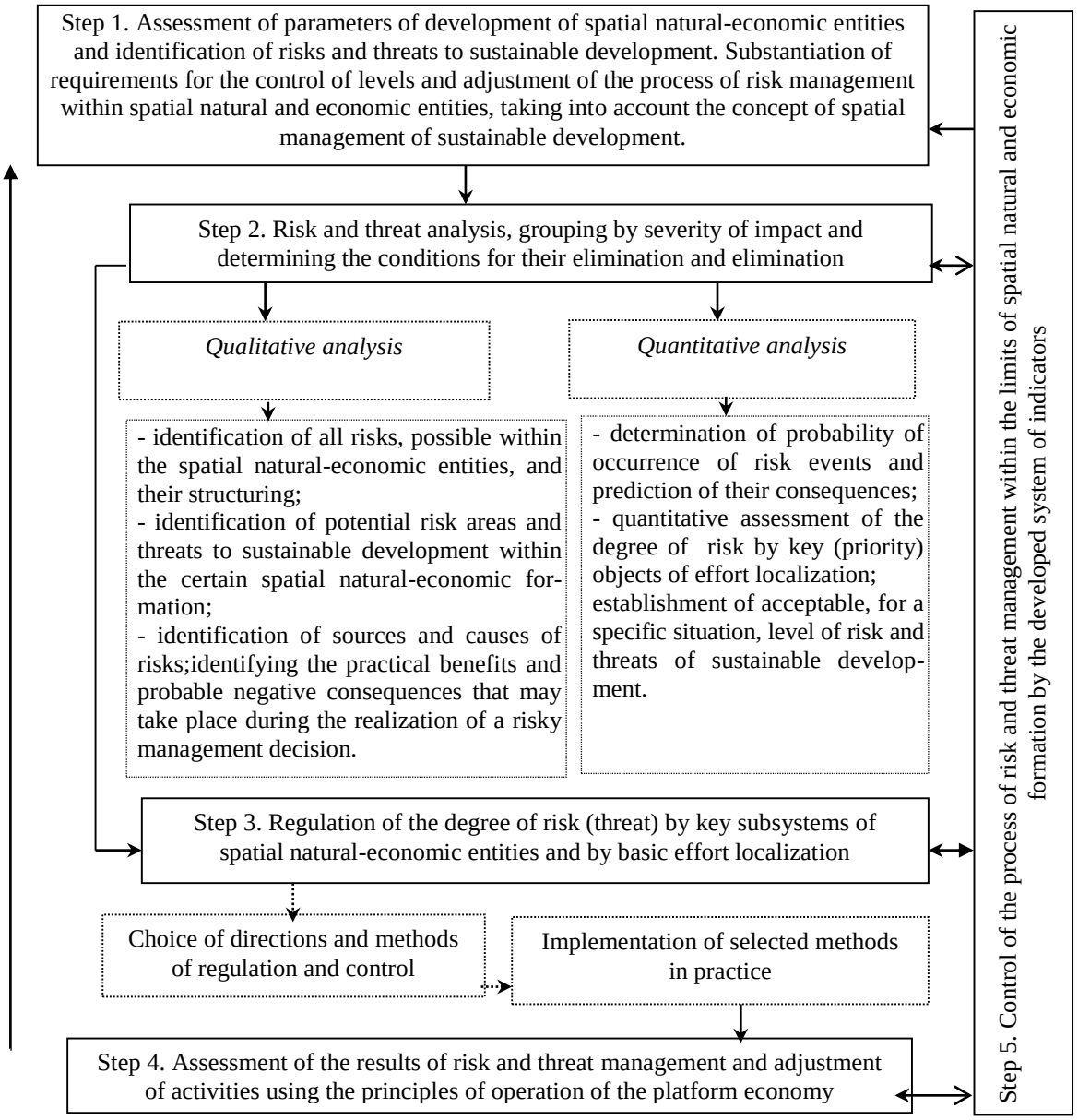

Fig.1. Scheme of the process of risk and threat management in the spatial environment of sustainable management.

The presented scheme and grouping determines the need to develop, first of all, a basic set of measures to reformat the overall management system of strategic potential and sustainable management in order to eliminate the consequences of the systemic risk group and prevent the destruction of their functioning, shifting the balance and stability. Because the critical load on the socio-ecological-economic state, respectively, will cause catastrophic (irreversible) changes in the dimensions of the functioning of social, environmental and economic subsystems of natural and economic entities.

However, in addition to the above list of identified (systemic) risks for Ukraine, in particular for the development of natural and economic entities, as well as to ensure their balanced functioning in conditions of limited resources, management entities involved in this problem should be addressed attention and risk groups, which in the short term may lead to a crisis or a critical situation of the socio-ecological-economic system of natural economic entities (Fig.2 – the structure of risks and threats to the development of natural and economic dynamic systems).

STRUCTURING OF BASIC RISKS TO SUSTAINABLE MANAGEMENT					
technological	**external**	**organizational**	**managerial**	**institutional**	**functional**
technical requirements	climatic conditions, natural disasters, urbanization	Organizational complexity	evaluation and forecasting system	underdevelopment of systems of analysis of conformity of internal development opportunities to external conditions	commercial and market risks
lack of certification			control and regulation procedures		
level of technology, volumes of introduction of innovations	peculiarities of foreign economic activity	structure of the resource provision	underdevelopment and inadequacy of the communication space	tax risks	structural and operational (production) risks
				inflation risks	
inefficiency and unreliability	the scales of natural resource potential	Inadequate financing of development	social and team risks	criminogenic risks	banking risks
				political risks	
destruction of scientific and technical potential	market conditions and underdeveloped markets	the scales of sustainable development potential	underdeveloped methodological support	local risks	insolvency risks
	medical and social risks	regulatory risks	information and intellectual risks	instability of functioning the national socio-economic system	change of legislation
quality	demography, migration				inadequacy of the X-institutional matrix

Fig.2. Improved risks structure in the processes of functioning and development of spatial natural and economic entities in Ukraine.

Therefore, the proposed structuring of risks and threats at the present stage of the national economy should take into account all the various factors arising directly from the use of any elementary components of the strategic potential of natural and economic systems, in general, to ensure the transition of the state and its regions to sustainable management (Fig.3).

HIERARCHICAL STRUCTURE OF RISKS AND THREATS TO SUSTAINABLE MANAGEMENT			
material group risks	**global risks**	**factor risks**	**risks of system-universal functioning**
basic risks by the structure of strategic potential of national and economic entities			
natural resources	geographical, territorial, climatic, relief	economic	Organizational
Industrial	cultural and historical	environmental	Management
energy	geo-economic	demographic	Informational
technical	Geopolitical	social	Innovative
economic security	transport and communication	political	intellectual and scientific
energy efficiency	global information communications and technology	financial	labor and personnel

HIERARCHICAL STRUCTURE OF RISKS AND THREATS TO SUSTAINABLE MANAGEMENT			
material group risks	**global risks**	**factor risks**	**risks of system-universal functioning**
derivatives of potential factor determinants of risk escalation			
reproductive	the impact of international transport corridors and centers of global influence	investment, monetary, credit, tax	regulatory and legislative
technologically available	influence of cultural and civilizational organizations	military and economic	institutional, structural change

Fig.3. Hierarchical risk structure of spatial development processes in Ukraine by format of strategic potential of the state and its regions.

Summarizing the above, we note that taking into account the hierarchical structure of risks and threats to sustainable management in Ukraine, given the matrix architecture of strategic potential, will identify new groups of risks and threats (with constant clarification of their composition), which are objectified, respectively, derivatives (due to the existence of a group of synthetic elementary potentials that form the space of potential for sustainable development of the state). From this we will be able to prevent their generation and ensure, even in conditions of resource constraints, the elimination of bias for a certain period.

Conclusions

Given the basic principles of physical economy, systems theory and strategic capacity building – it is possible to develop and propose for each territorial economic entity (as well as for the socio-economic system) a list of management tools to prevent ever-increasing risks and threats to sustainable management. According to the results of systematization of risks and threats to the processes of spatial management of strategic potential, and within its natural resource assets of the state and its regions, identification of qualitative measurements and characteristics of modern socio-ecological and economic system in the disclosure of its five probable states, development of a set of measures for the safe organization (reformatting) of the space of territorial natural and economic entities; b) construction and clarification of the structure of risks and threats, the grouping of which ensures their delimitation by the nature of four elementary systems of strategic potential (material, global, factorial, system-universal functioning) with the inclusion of hazards arising from the development of derivatives, potentially determining factors that shape the scale of the potential for sustainable development. In this case, the results of the author's scheme of permanent identification and clarification of the risks and threats to sustainable management will further: a) identify, justify and form, using scientific and natural principles of physical economy, a set of resource-functional determinants of sustainable management; b) methodologically important provisions for assessing and forecasting the parameters of sustainable management of a particular territorial economic entity or regional or national socio-economic system.

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