

MANAGEMENT OF ENVIRONMENTAL AND ECONOMIC RISKS IN THE SYSTEM OF SUSTAINABLE ECONOMIC DEVELOPMENT

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Abstract

Today, the words "sustainable" and "development" are often used when choosing a concept for promotion, growth or a description of a government strategy. The popularity of the term "sustainable development" came when a close relationship was established with such a direction as the "green economy". Green Economy is an area initiated by the United Nations (UN). In 2008, the UN came up with a proposal for a Green Economy, which was backed up by global research. The initiative was supported at the country level, as investments in the environment went in the context of sustainable development. Thanks to this initiative, the green economy, in conjunction with the eradication of poverty, has been included in the 2012 Rio + 20 agenda and recognized as a tool for contributing to the functioning of the vision for sustainable development. The UN developed an exhaustive definition of the "green economy", which included a story about both improving human well-being and increasing social justice, at the same time talking about reducing environmental risks and reducing environmental deficits. The last decades have raised the importance of the green economy concept to a scale comparable to the strategic priorities of many countries and intergovernmental organizations.

Keywords: world economy, environmental risks, natural resource, sustainable development, ecological development.

I. Introduction

The concept of sustainable development is multidisciplinary, systematic, complex and perhaps even revolutionary. Deriving a capacious and comprehensive definition of this concept is undoubtedly a rather difficult task. The term sustainable development was first used in 1980, when the concept of the whole concept was still quite simple. It was mentioned in the framework of the document "World Conservation Strategy", prepared by the International Union for Conservation of Nature and Natural Resources (IUCN). The World Wildlife Fund (WWF or WWF) and the United Nations Specialized Agency for the Conservation of the Biosphere (UNEP) took part in the development of the document. This strategy is the first international document on the conservation and rational use of the resources of the biosphere and individual ecosystems [1]. The report argues that for development to be sustainable, it must support the conservation of resources, not hinder. It targets policy makers, conservationists and development professionals [2]. The report defines the principles of protection of ecological processes and life support systems, conservation of genetic

diversity and sustainable use of resources of various ecosystems. In addition to highlighting priority conservation issues and ways to address them, it formulates the first definition of sustainable development. Within the framework of their activities, the organizations made the following definition: sustainable development is a strategy for the preservation of the natural resources of the earth [1]. In 1987, the World Commission on Environment and Development (WCED) published a document entitled *Our Common Future*. This report argues that critical global challenges are primarily associated with unsustainable consumption and production patterns. The authors called for the development of a strategy that connects development and the environment, strengthened international cooperation in the field of environment and development, evaluate and propose new forms of cooperation that can go beyond existing models and increase the level of understanding and commitment on the part of individuals, civil society organizations, businesses, institutions and governments. This document offers a broader and more loose definition that reads as follows: sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs [2]. This document, in another way, called the "Brundtland Report", has been adopted by almost every international institution, agency and research and production association (NGO). Countries that made a conscious effort to understand the concept of sustainable development, agreed with it and were close to making changes not only at the international level, but also at the national level, faced challenges in implementing sustainable development policies and saw the risks that hinder implementation. Sustainable development is also associated with identifying the limits and possibilities of establishing restrictions and regulations for the development of socio-natural and technological systems and the impact on them, otherwise it can be interpreted as a reaction to the constantly growing development risks in a technological society. There is a common space of risks, of which it is advisable to single out environmental risks, since they have a direct relationship with the concept of sustainable development and the green economy [3], the term of which was used earlier.

Environmental risk is the likelihood of an event having adverse consequences for the natural environment and caused by the negative impact of economic or other activities, natural and man-made emergencies [4]. Environmental risks stand out from risk societies, as it is a multifactorial system of causal causes and consequences, which are most often long-term (for example, radioactive contamination). By their nature, environmental risks are characterized by spatial distribution, multiplier effects, accumulation and irreversibility. But the most striking characteristic of environmental risks is interconnectedness. For example, over-deforestation leads to deforestation and destruction of wildlife habitats, leading to depletion of biodiversity. Deforestation not only accelerates soil erosion, but also causes greenhouse gas emissions and concentrations in the atmosphere, thereby increasing the likelihood of climate change. A negative change in one area can aggravate another area, and vice versa.

II. Methods

Environmental risk assessment is a comprehensive justification of the consequences of economic activities in conditions of a high degree of uncertainty and potential danger to the environment and public health. Environmental risk assessment, both qualitative and quantitative, includes accompanying uncertainties, the likelihood of occurrence and the severity of known or potentially adverse impacts based on hazard identification and hazard characterization [6]. Assessment of environmental risks is directly related to the study and analysis of the expected impact of natural and man-made processes on human health and the quality of the environment. One of the methods for assessing environmental risks can be the method of systems analysis. This method is an integration of the following processes: hazard identification, hazard characterization

and exposure assessment. Environmental risk assessment requires a wide range of skills, as it is necessary to process information and data from various sources and apply mathematical knowledge in the modeling process. When using this method, the risk assessment and hazard analysis of an object is carried out in several stages [3-4].

First step. In the first step, we need to do a preliminary hazard analysis. To identify and describe possible hazards, it is necessary to study information about the structure and components of the object, about the technological schemes, the equipment used and its reliability, about the chemical and thermodynamic characteristics of the materials used at the object, etc. It is necessary to determine under what circumstances they can cause harm. We associate all identified possible dangers with production processes and draw up a list of possible incidents.

Second phase. During the second stage, we consider all possible hazards with a detailed description of possible consequences and accidents and assess the possible probabilities of their occurrence based on mathematical modeling. Stage three. The last stage includes the completion of the system analysis by forecasting and assessing emergency risk [7]. As a result of the risk assessment, the required level of security can be established. Reducing the level of risk and a favorable risk comparison result ensures that the situation is safe. The scope of environmental risk assessment is gradually expanding, and the importance of the relationship between risk assessment, risk management and risk communication is becoming evident [8]. Risk management is the process of balancing competing interests and concerns. Each risk management decision will be a "balancing act" of competing priorities, and sometimes a trade-off between seemingly conflicting principles may be required. Environmental risks and their countermeasures always entail positive and negative environmental, economic and social trade-offs [9]. It is clear that risk management must go beyond a single risk assessment in order to mobilize interdisciplinary expertise in assessing multiple scientific and social risks. In addition, stakeholder participation plays a key role in the design and implementation of long-term and self-sustaining risk management and resilience measures. Public access to information, risk communication and stakeholder participation in decision-making are fundamental to the countermeasure identification process. However, effective measures to manage risk and promote resilience require interdisciplinary, multidimensional, multidimensional research. Universities should be major players in transforming the multidisciplinary science platform to support risk management and promote sustainability [9].

III. Results

The most important component of the strategy for sustainable territorial development is the preservation of the natural environment, its reproductive capabilities in the context of solving the global problem of preserving the Earth's biosphere as the main prerequisite for the sustainable development of world civilization. Ensuring environmentally sustainable development of the country is largely associated with the solution of a number of major interregional problems of a national character and international border environmental problems. Air and water pollution, especially through the transfer of pollution from neighboring countries in a number of border regions of the country, the depletion of biodiversity has spread to most of the country. The imposition of various types of anthropogenic impact on the environment leads to the emergence of acute complex environmental problems, which, at the same time, have a clearly expressed regional character. An important place in the strategy of sustainable territorial development is occupied by the fulfillment by Russia at the regional level of international obligations in the field of environmental protection, which corresponds to the objective processes of globalization of various spheres of human activity. In order to ensure sustainable development of the economy and prevent harm to the state of the environment a rational approach to organizing the production

process of any economic activity is needed [7-8].

The decision-making process in the economy at all levels of management takes place under conditions of constantly existing risk. Identifying, assessing and managing risk is a prerequisite for any effective business activity. Therefore, the problem of risks in relation to individual enterprises or individual economic actions occupies an important place in economic theory and practice. One of the most important factors hindering the balanced and stable regional development of the economy is environmental and economic risk, the analysis and assessment of which must be considered integral parts of the rational nature management mechanism. At the same time, it should be noted that the level of knowledge of environmental and economic risks in nature management, assessment and management of them is insufficient, and, therefore, remains relevant for scientific research. In this work, an attempt is made to define the concept of "environmental economic risk", substantiate its essence in the interaction of its two components: environmental and economic [5].

The conditions for the formation of a risk situation include: uncertainty, the presence of an alternative solution (including refusal to choose), the ability to assess the future result of the chosen alternative. Economic risk refers to the likelihood of incurring losses expressed in monetary terms. On the basis of the main reason for the occurrence, economic risks can be divided into: natural-natural - risks in the event of the manifestation of the forces of nature, environmental - risks associated with the consequences of environmental pollution; political - risks arising from the different political situation in the country; transport - risks, in the case of the carriage of goods by a vehicle; commercial - risks that arise due to the uncertainty of the result of the transaction, and carry a danger in the form of losses. Environmental risk - the likelihood of negative changes in the environment, including long-term consequences, due to a negative impact on the environment. There are three main components of environmental risk: assessment of human health and the possible number of victims, assessment of the state of biota (primarily photosynthetic organisms) by biological integral indicators, assessment of the impact of pollutants, man-made accidents and natural disasters on humans and the environment. Any excess of the limits of permissible environmental risk in certain industries must be suppressed by law. For this purpose, they limit or suspend the activities of environmentally hazardous industries at the decision-making stage. The permissible environmental risk is assessed with the help of the state environmental expertise, and if it is exceeded, the materials submitted for approval are rejected. An environmental risk factor exists at any production facility, regardless of their location. Under environmental and economic risks in the work of N.P. Tikhomirov understands the risks of economic losses, damages that may be at objects of various levels of public organization due to the deterioration of the state (quality) of the environment. The part "economic" in the term "environmental and economic risk" emphasizes that objects subject to this risk are part of the economic subsystem and the losses incurred by them have an economic (cost) assessment; the part "environmental" indicates the cause of the risk [4].

IV. Discussion

Any human activity is related to the natural environment, therefore, getting feedback from the natural environment is inevitable. Due to this inevitability, it becomes necessary to assess the potential environmental risk, the danger of planned or already ongoing economic activity in order to maximize the satisfaction of the needs of a generation, but not on the basis of ecosystem degradation. Currently, a comprehensive reassessment and reorganization of the entire ecological sphere and modern lifestyle is taking place. It is necessary to develop the field of environmental analysis, environmental awareness and literacy, a culture of environmental safety and environmental readiness to protect and preserve natural and material resources in the environment. Human activity, supported by knowledge of the laws of nature, is able to save the planet [6]. The planet and its nature needs interaction, and not the cruel influence of people on it. This transformation can be facilitated by a good level of ecological and moral culture, the formation of which must begin at a young age and continue throughout life. Humanity's ability to intuitively assess and manage risks is fundamental to human survival and development. Those who were adept at recognizing risk and studying danger survived to reproduce, while those who could not inevitably perish from environmental hazards. While dealing with "risk" is a long-standing practice, the concept of "assessing and managing risk" is relatively new as it has been formally recognized and practiced using this terminology over the past 20-30 years. During this period, as risk issues have become more complex and the relevant scientific knowledge has become more detailed, the need for guidelines that provide a framework for risk assessment and risk management has become more evident.

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