



GLOBAL ENVIRONMENTAL FACTORS OF STATE ECONOMIC SECURITY

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Annotation: *The article examines global ecological factors that directly affect the economic security of the state. It analyzes the consequences of climate change, the intensification of international environmental challenges, transboundary ecological threats, global competition for resources, and ecological imbalances as key risks to the stability of national economies. Furthermore, the article emphasizes the importance of international cooperation, the adoption of green technologies, and the implementation of sustainable development concepts in ensuring ecological and economic security.*

Keywords: *economic security, global ecological factors, climate change, transboundary threats, natural resources, green technologies, international cooperation, sustainable development.*

INTRODUCTION

The materialization of environmental risks impacts the socio-economic situation within society, and society itself can generate environmental tensions. Consequently, the processes of the formation and evolution of environmental risks cannot be viewed in isolation from other aspects of ensuring overall societal security. On the other hand, it is essential to clearly understand that achieving absolute safety under modern economic conditions is impossible. This is because it is impossible to guarantee the complete harmlessness of products or the absolute reliability of technical and technological systems. Nor is it possible to entirely prevent damage to the external environment during production processes, since, as V. Leontief rightly noted, "environmental pollution is a by-product of any ordinary economic activity."

Risks vary in nature, and humans strive to protect themselves from them as much as possible. The concept of "risk" itself should be characterized as a negative attribute or quality of the surrounding reality capable of causing harm to people, the natural environment, and material and spiritual assets. A crucial point is that when risks arise, they negatively affect all elements of the environment; in other words, they do not possess selective characteristics. In the most general terms, hazards are distinguished as being of either natural or anthropogenic origin. Natural hazards arise from natural phenomena and the statics and dynamics of the natural environment's components.

LITERATURE REVIEW

Many scholars have put forward various conceptual and practical approaches regarding the environmental factors of state economic security in scientific literature. An analysis of their views reveals the following:

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American researcher S. Dalby defines environmental security as a "prerequisite for ensuring the stable functioning of international and national economic systems" [1]. According to him, compromising environmental security also poses a threat to the economic independence of states.

Similarly, M. Redclift closely links environmental security with socio-economic development, identifying the policy on natural resource utilization as a crucial factor in economic security [2].

In his works, J. Sachs (a former UN advisor) assesses environmental problems as threats to economic security, emphasizing that climate change and natural resource scarcity pose long-term risks to the global economic system [3].

Meanwhile, in the famous "Stern Review," N. Stern provided scientific evidence that the damage caused by climate change to the global economy could lead to a contraction of up to 20% of the Gross Domestic Product (GDP) [4]. Chinese scholars, including Zhang, developed a comprehensive system of indicators for assessing ecological security, identifying water resources, land degradation, and biodiversity as key criteria [5]. This method enables the determination of the level of regional economic security.

Similarly, C. Brown examined ecological security through a systems approach, emphasizing that state stability is guaranteed when economic, social, and ecological indicators are interconnected [6].

Using the Aral Sea crisis as a case study, A. Micklin demonstrated not only the natural but also the socio-economic consequences of an ecological disaster. He argued that the mismanagement of water resources disrupted agricultural production, dealing a severe blow to regional economic security [7].

T. Homer-Dixon identifies environmental problems manifesting through conflict and migration flows as factors threatening the economic security of states. He posits that the scarcity of environmental resources exacerbates political instability, thereby weakening economic systems [8].

Economist J. Stiglitz identifies the green economy and sustainable investments as crucial avenues for strengthening a nation's economic security. He emphasizes that countries failing to prioritize environmental security will lose economic competitiveness in the long run [9].

ANALYSIS AND RESULTS

Anthropogenic risks arise during the course of deliberate human activities aimed at meeting essential needs. In doing so, humans themselves create new sources of danger most notably, the military threat. A paradoxical situation has emerged in modern times: the catastrophic risk of nuclear war facing our planet simultaneously serves as a deterrent against global armed conflict and a guarantee of peace. Risks are inevitable, as they objectively accompany any form of societal development. Risks or threats can accumulate, and this "accumulation" of threats can escalate to the level of a crisis or even a catastrophe.

Threats that initially undermine stability can, under crisis conditions, heighten the overall security risks facing society. Crises themselves are characterized by the persistent nature of these risks over an extended period. During a crisis, threats do not lose their tendency to accumulate; if the crisis remains unresolved, it can ultimately lead to a catastrophe. A catastrophe is akin to a "crisis squared," bringing about severe consequences across virtually all spheres of social life simultaneously. A disaster can lead to mass casualties, the complete destruction of the ecosystem, and socio-psychological tension.



Addressing the aftermath of a disaster entails significant economic costs and worsens the overall economic situation; this can lead to the erosion of the social protection system, which is crucial for managing disaster consequences. The Aral Sea tragedy serves as an example of a large-scale man-made disaster in our republic. From the perspective of meeting societal needs, environmental security is a fundamental requirement for both society and the individual. Consequently, satisfying this need or ensuring a state of environmental security holds socio-economic significance.

In our view, meeting society's need for environmental security fulfills a range of specific functions that are social, economic, and reproductive in nature. The social function relates to the fulfillment of a human being's natural needs as a biological entity for a healthy and favorable natural environment. Only under conditions of economic security is it possible to ensure a satisfactory level of public health, preserve the societal gene pool, and achieve social balance and stability within society. The reproductive function is linked to the process of regenerating the natural environmental conditions that ensure all the prerequisites for production and the sustainable development of the "production-nature" system.

Under conditions of environmental security, the physical and spiritual energy expended by people in production and daily life is effectively restored, and the natural environment retains its unique capacity for self-regeneration. The economic function reflects the interconnection between the state of environmental security and all spheres of economic activity within society. This function is primarily grounded in the direct economic benefits derived from conducting social production within a healthy, high-quality natural environment a crucial prerequisite for socio-economic development. As the "society-nature" system evolves, the scope of these functions continues to expand.

Serious risks to vital interests arise from environmental threats that disrupt the normal functioning and reproduction of the "society-nature" relationship. In our view, threats to environmental security can be categorized into two aggregated groups: external and internal. External threats encompass all factors and conditions of global significance and scale that impact economic subsystems (whether a state, region, or specific territory) and jeopardize their ecological stability with varying degrees of intensity. External threats primarily encompass global environmental processes that are detrimental to the planet's biosphere as a whole, as well as risks arising from uncontrolled human activity. Specifically, regarding the environmental safety of business entities in the Republic of Karakalpakstan and the Khorezm and Surkhandarya regions, such external threats include global warming driven by atmospheric pollution and the greenhouse effect; the depletion and contamination of surface and groundwater; the expansion of desert areas and the reduction of forest cover; and the steady decline of biodiversity.

Risks involving genetic changes include the disruption of global and regional ecological balances and the alteration of the proportions of the Earth's ecological components; the occurrence of secondary chemical reactions across all layers of the biosphere; radioactive contamination of specific areas; the presence of weapons of mass destruction; demographic overpopulation in certain regions driven by absolute population growth; and atmospheric pollution-related risks affecting the atmosphere, among others. If we consider that the Republic of Karakalpakstan, the Khorezm region, and the Surkhandarya region like any other region or the state as a whole are part of the planet's unified ecological space, a new perspective emerges for understanding the nature of these external

3	ISSN 2319-2836 (online), Published by ASIA PACIFIC JOURNAL OF MARKETING & MANAGEMENT REVIEW., under Volume: 15 Issue: 08 in August-2026 https://www.gejournal.net/index.php/APJMMR
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threats and for ensuring the environmental safety of economic entities within these areas as integral components of that global ecological space.

Given that the Republic of Karakalpakstan, the Khorezm region, and the Surkhandarya region are inseparable elements of the national ecological space, it is appropriate to specifically highlight the internal environmental threats facing these regions. Certain internal threats affecting business entities in these areas objectively mirror external threats on a smaller scale, while others arise as a consequence of external threats impacting the region's natural environment; at the same time, these regions generate their own unique environmental threats due to local natural-geographic and socio-economic characteristics.

Key internal factors threatening the ecological security of the Republic of Karakalpakstan, the Khorezm region, and the Surkhandarya region include: the drastic reduction of forest areas due to the overexploitation of forest resources; the decline in soil fertility on agricultural lands amidst general land degradation; the presence of localized pollution sources and areas of environmental deterioration; the contamination of groundwater and surface water in the region; the continuous loss of biodiversity; the potential threat of man-made disasters linked to the region's industrial profile; the technological backwardness of economic sectors, characterized by high energy and resource intensity; and the low level of environmental awareness among the population.

It should be noted that identifying internal ecological threats must not be limited to merely pinpointing the factors and conditions that reflect environmental degradation. Attention must also be paid to threats that jeopardize economic security threats which often carry the same weight as direct ecological hazards. This relates not only to how a socio-economic crisis limits the capacity to address environmental threats but also to the role macroeconomic policy plays in environmental sustainability particularly when viewed through the lens of direct economic threats.

From this perspective, it is appropriate and expedient to classify certain threats to economic security as environmental or eco-economic in nature. Such economic threats at the regional level encompass factors and phenomena such as the criminalization of the economy and corruption in economic management; a lack of legal discipline; widespread concealment of income; rising external debt; chronic budget deficits; poverty; unemployment; and the erosion of the scientific and technical potential of the region and the country as a whole. Under certain conditions, the scale and persistence of these factors can lead to a deterioration of the environmental situation.

Therefore, the analysis of economic threats must be aligned with current and projected environmental conditions, while simultaneously accounting for the positive, negative, or neutral environmental impacts of macroeconomic measures aimed at mitigating these threats. The implementation of economic policy must ensure not only socio-economic stabilization but also the improvement of society's environmental security. At the same time, the concept of "security" itself is both comprehensive and multifaceted.

Thus, by summarizing the results of the research conducted and analyzing data from other sources, we can conclude that the following components serve as objects of environmental security:

- 1) all of Earth's natural spheres: the atmosphere, lithosphere, hydrosphere, and biosphere;
- 2) the environmental interests of the economic entities within the entire system of social production;
- 3) the natural needs and environmental interests of each individual.

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However, in our view, this should also encompass "Near Space" including near-Earth space and regions of the Solar System that are increasingly being accessed as society's productive forces rapidly expand.

Currently, issues regarding space debris in near-Earth orbit pose a threat to scientific assets and the lives of space crews. We believe that any object subject to anthropogenic impact should be regarded as an object of environmental security, given that nature is no longer capable of rectifying human errors on its own. The emergence of an environmental threat can disrupt the normal process of socio-economic reproduction and, consequently, poses a direct risk to economic interests. Based on this, and taking into account the environmental imperative, we believe that economic relations at the following levels can be considered objects of environmental and economic security:

The objects of ecological and economic security within economic relations are as follows:

Microeconomic – individual entrepreneurial entities

Macroeconomic – the economies of individual countries

Mega-economic – the global economy

Economic security cannot be achieved without ecological security; therefore, ensuring ecological security lays the foundation for economic security. Consequently, the concepts of "ecological security" and "economic and ecological security" are essentially the same.

Thus, a key challenge in characterizing economic and ecological security lies in defining its primary criteria. Currently, numerous security criteria including those for ecological security exist in scientific publications and various regulatory and advisory documents. As a result, it is often difficult to determine which criteria should be used to make a definitive decision regarding the security of a specific entity. At the same time, it is both practical and expedient to employ a limited number of integrated security criteria to obtain a generalized assessment of the entity's status. The most general criterion could be defined as "minimal aggregate harm inflicted upon society, individuals, and nature."

However, while this is a crucial criterion, it is insufficient on its own. In our view, the system of ecological security criteria proposed by researchers T. Akimova and V. Khaskin is more thoroughly conceived and well-founded, encompassing the following integrated criteria. For territorial natural complexes—including administrative units the level of ecological-economic or natural-production parity (that is, the degree to which the total technogenic load on the territory aligns with its ecological-technogenic capacity, or its threshold of resilience against harmful technogenic impacts) can be introduced as a primary criterion for ecological safety. The mathematical formulation (proposal) for this criterion is as follows:

“total technogenic load” ≤ “self-renewal capacity of the territory’s natural systems”

Thus, this criterion is based on comparing a territory's natural and industrial (technogenic) capacities and serves as a foundation for the environmental regulation of economic activity. For specific ecosystems, the primary safety criteria include integrity, the preservation of species composition, biological diversity, the structure of internal relationships, and productivity.

Consequently, ecosystem safety is determined by how close the ecosystem's state is to the limits of its stability. The fundamental criterion for human environmental safety is the preservation of health and a normal life. Indicators such as life expectancy, morbidity and mortality rates, birth rates, and other metrics characterizing public health and quality of life can be used to measure the level of human environmental safety.

At the same time, indicators regarding deviations of environmental conditions from established standards can also be employed to measure levels of economic and environmental safety. In our view, the level of human knowledge and education, as well as the moral standards of the population, can also serve as important indicators and not merely because humans have created environments that are hazardous to themselves. After all, as humans increase the anthropogenic burden on nature and continue to disrupt the stability of the external natural environment, it is clear that they cannot guarantee their own economic and environmental security.

Thus, the primary subject of environmental security is the individual, society, or the state as a whole. The state is entrusted with the principal role in ensuring the environmental and economic security of society. This responsibility stems not only from "market failures" but also from the very necessity of the state's existence in the face of tasks of such magnitude. The state's strategy for ensuring economic and environmental security must be long-term in nature and grounded in the principle that "forecasting and prevention" are more effective than "response and correction" when addressing threats within the realm of environmental-economic relations.

However, the multitude of economic and environmental threats necessitates focusing attention and efforts on the most pressing measures to mitigate them. Given the profound interdependence between humans as elements of nature and the entire biosphere, it is appropriate to view the biosphere itself as a subject of economic and environmental security. Evidently, the vital interests of the subjects of environmental security serve as the object of that security. Consequently, human environmental needs and interests constitute the ultimate goal of the process of ensuring economic and environmental security. In conclusion, the study established that environmental security is an integral part of the national security of society as a whole; within the national security system, it is accorded a central role alongside key components such as maintaining social stability, ensuring the country's defense capability, achieving food independence, and securing economic stability. The economic function reflects the interconnection between the state of environmental security and all spheres of economic activity within society. It was determined that the implementation of economic policy must ensure the enhancement of society's environmental security alongside socio-economic stabilization. The key components defining the quality of the objects of environmental security were also examined.

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